

03/30/2026

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

Benjamin E. Graves
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COMPANY NAME HDR ENGINEERING, INC.
ADDRESS 120 BRENTWOOD COMMONS WAY
SUITE 525
CITY, STATE BRENTWOOD, TN 37027
PE NAME, P.E. NO. B. EVAN GRAVES, 117107

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE OF TENN. CODE ANN. §62-2-306.

SHEET NAME	SHEET NO.
SIGNATURE SHEET	STRUCTURE-SIGN1
TITLE SHEET	1
ESTIMATED QUANTITIES	2
GENERAL NOTES	3
PROJECT COMMITMENTS	4
TRAFFIC CONTROL PLANS	5-15
TRAFFIC CONTROL QUANTITIES AND NOTES	16
BRIDGE PLANS	BR-131-410 THRU 424

YEAR	PROJECT NO.	SHEET NO.
2026	19103-4110-04	STRUCTURE-SIGN1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

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Index Of Sheets

SHEET NO.	DESCRIPTION
STRUCTURE-SIGN1	SIGNATURE SHEET
1	TITLE SHEET
2	ESTIMATED QUANTITIES
3	GENERAL NOTES
4	PROJECT COMMITMENTS
5-16	TRAFFIC CONTROL PLANS

STANDARD ROADWAY DRAWINGS

ROADWAY DESIGN STANDARDS

DWG NO.	REVISION	DESCRIPTION
RD-A-1	02-20-20	STANDARD ABBREVIATIONS A THROUGH L
RD-A-2		STANDARD ABBREVIATIONS M THROUGH Z
RD-L-1	01-30-26	STANDARD LEGEND
RD-L-1A		STANDARD LEGEND

DESIGN - TRAFFIC CONTROL

DWG NO.	REVISION	DESCRIPTION
T-M-5	01-24-25	MARKING DETAIL FOR FREEWAYS
T-M-6	01-24-25	MARKING DETAIL FOR EXPRESSWAY AND FREEWAY INTERCHANGES
T-M-8	01-24-25	MARKING DETAILS FOR EXPRESSWAYS & FREEWAYS
T-M-15	01-24-25	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR INTERSTATES AND ACCESS CONTROLLED ROUTES
T-M-16	01-24-25	RUMBLE STRIPE INSTALLATION LAYOUT
T-M-16A	01-24-25	RUMBLE STRIPE DETAILS FOR EDGE OF PAVEMENT AND CENTERLINE
T-M-18	01-24-25	FLEXIBLE DELINEATOR DETAILS
T-WZ-10	03-26-25	ADVANCED ROAD WORK SIGNING ON HIGHWAYS AND FREEWAYS
T-WZ-12	03-26-25	ONE LANE CLOSURE DETAIL FOR BRIDGES ON DIVIDED HIGHWAYS
T-WZ-16	03-26-25	LANE SHIFT FOR DIVIDED HIGHWAYS AND FREEWAYS
T-WZ-FAB1	03-26-25	FLASHING YELLOW ARROW BOARD
T-WZ-PBR1	03-26-25	INTERCONNECTED PORTABLE BARRIER RAIL
T-WZ-PBR2	03-26-25	DETAILS FOR WORK ZONE CHANNELIZATION DEVICES
T-WZ-PCB2	03-26-25	20 FOOT PORTABLE CONCRETE BARRIER RAIL
T-WZ-PCB2A	03-26-25	20 FOOT PORTABLE CONCRETE BARRIER RAIL STIFFENER TUBE
T-WZ-PCB3	03-26-25	PORTABLE CONCRETE BARRIER RAIL DETAILS

LIST OF STANDARD DRAWINGS

DWG NO.	REVISION	DESCRIPTION
STD-1-5	06-05-23	REINFORCED CONCRETE PAVEMENT AT BRIDGE ENDS
STD-1-6	05-10-21	BRIDGE END DRAIN DETAILS 2'X 8'-7" & 4'X 8'-7" WITH PAVEMENT AT BRIDGE ENDS
STD-1-7	05-10-21	BRIDGE END DRAIN DETAILS 2'X 8'-7" & 4'X 8'-7" WITH PAVEMENT AT BRIDGE ENDS
STD-1-8	05-10-21	BRIDGE END DRAIN DETAILS 2'X 8'-7" WITH PAVEMENT AT BRIDGE ENDS
STD-10-1	06-05-23	MISC. ABUTMENT AND DRAINAGE DETAILS
STD-10-2	06-05-23	MISC. ABUTMENT AND PAVEMENT AT BRIDGE ENDS BACKFILL DETAILS

SPECIAL PROVISIONS

SP NO.	REVISION	DESCRIPTION
SP108B		
SP712PTQ	10-07-24	TRAFFIC QUEUE PROTECTION

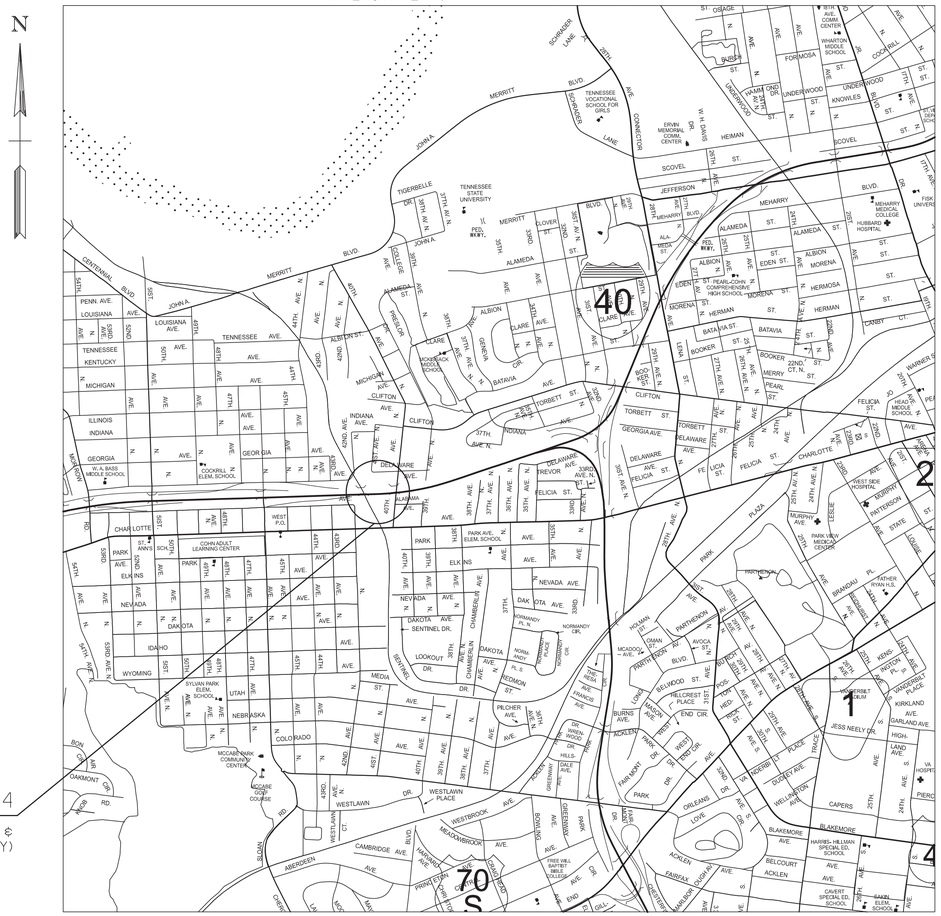
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING

DAVIDSON COUNTY

BRIDGE NO. 19-I0040-13.64 OVER CSX RR
(FEDERAL ID: 19I00400039)
BRIDGE NO. 19-I0040-13.76 OVER 40TH AVENUE N.
(FEDERAL ID: 19I0040004I)
PS&E
BRIDGE REPAIR
INTERSTATE 40 F.A.H.S. NO.

PROJECT NO. 19103-4110-04

BRIDGE NO. 19-I0040-13.64 (WB LANES ONLY) &
BRIDGE NO. 19-I0040-13.76 (WB LANES ONLY)



SCALE: 1"= ¼ MILE

INTERSTATE 40	
ADT (2019)	128,550
POSTED SPEED	55 MPH

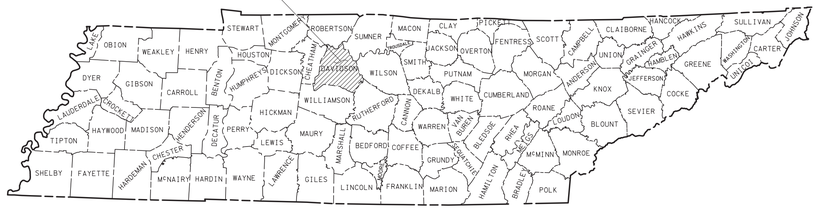
LAND DISTURBANCE: LESS THAN ONE ACRE

DOES THIS PROJECT QUALIFY FOR UTILITY CHAPTER 86	NO
WORK ZONE SIGNIFICANCE DETERMINATION	
SIGNIFICANT	YES

NO UTILITY CONFLICTS ARE ANTICIPATED BASED ON SCOPE OF WORK

TENN.	YEAR	SHEET NO.
	2026	1
FED. AID PROJ. NO.		
STATE PROJ. NO.	19103-4110-04	

PROJECT LOCATION



BRIDGE DRAWINGS

DWG. NO.	DRAWING
BR-131-410	LAYOUT OF BRIDGE TO BE REPAIRED
BR-131-411	PHASED CONSTRUCTION DETAILS
BR-131-412	PHASED CONSTRUCTION DETAILS
BR-131-413	LAYOUT OF BRIDGE TO BE REPAIRED
BR-131-414	PHASED CONSTRUCTION DETAILS
BR-131-415	PHASED CONSTRUCTION DETAILS
BR-131-416	ESTIMATED QUANTITIES
BR-131-417	GENERAL NOTES
BR-131-418	GENERAL REPAIR DETAILS
BR-131-418A	GENERAL REPAIR DETAILS
BR-131-419	GENERAL REPAIR DETAILS
BR-131-420	GENERAL REPAIR DETAILS
BR-131-421	GENERAL REPAIR DETAILS
BR-131-422	GENERAL REPAIR DETAILS
BR-131-423	GENERAL REPAIR DETAILS
BR-131-424	GENERAL REPAIR DETAILS

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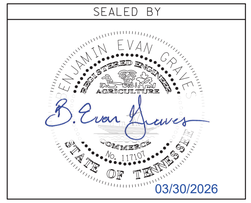


03/30/2026

APPROVED:

SHANE HESTER, CHIEF ENGINEER

DATE

APPROVED:

WILL REID, COMMISSIONER

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED APRIL 1, 2026 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT C.E. MANAGER 1 OR
TDOT DESIGN MANAGER 1 JOSEPH BENDER

DESIGNER HDR

DESIGNER EVAN GRAVES

CHECKED BY CARTER BEARDEN

P.E. NO. 19103-4110-04

PIN 131161.00

REFERENCE DRAWINGS
(TO BE PRINTED WITH PLANS)

DRAWING NO.	DESCRIPTION
M-435-82 THRU M-435-95, M-359-78 THRU M-359-95, M-314-66 THRU M-314-70, M-144-77 THRU M-144-88, K-66-12 THRU K-66-18	EXISTING BRIDGE PLANS (BRIDGE NO. 19-I0040-13.64)
M-435-96 THRU M-435-108, M-359-96 THRU M-359-111, M-314-71 THRU M-314-83, M-144-91 THRU M-144-101, K-66-19 THRU K-66-26	EXISTING BRIDGE PLANS (BRIDGE NO. 19-I0040-13.76)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	2

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

(1) 204-02.01 INCLUDES COSTS OF ALL EQUIPMENT AND LABOR TO EXCAVATE BEHIND THE BACKWALL AT BOTH ABUTMENTS OF BOTH BRIDGES FOR THE LIMITS SHOWN ON DWG. NO. BR-131-418A. THIS ITEM WILL INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING ALL NECESSARY SHORING.

(2) 303-10.01 INCLUDES COST OF ALL LABOR, EQUIPMENT AND MATERIAL REQUIRED FOR PLACEMENT OF OPEN GRADED STONE BEHIND BACKWALLS AT BOTH ABUTMENTS OF BOTH BRIDGES. FOR NOTES AND DETAILS, SEE DWG. NO. BR-131-418A AND STD. DWG. NO. STD-10-2.

(3) 406-04.01 INCLUDES COST OF ALL LABOR AND MATERIALS TO PLACE A POLYMER MODIFIED CONCRETE OVERLAY (PMC OVERLAY) ON BRIDGE NO. 19-I0040-13.64 AND BRIDGE NO. 19-I0040-13.76 FOR NOTES AND DETAILS, SEE DWG. NO. BR-131-419. AND BR-131-423.

(4) 415-01.02 INCLUDES ALL COSTS ASSOCIATED WITH COLD PLANING EXISTING ASPHALT PAVEMENT ON BOTH APPROACHES OF THE WESTBOUND LANES OF BRIDGE NO. 19-I0040-13.64 AND BRIDGE NO. 19-I0040-13.76. FOR NOTES AND DETAILS, SEE DWG. NOS. BR-131-419 AND BR-131-423.

(5) 604-10.14 INCLUDES COST OF ALL LABOR AND MATERIALS REQUIRED TO REMOVE AND DISPOSE OF THE EXISTING ASPHALT WEARING SURFACE WITHIN THE LIMITS OF BRIDGE NO. 19-I0040-13.64 (WESTBOUND LANES ONLY) AND BRIDGE NO. 19-I0040-13.76 (WESTBOUND LANES ONLY). MILLING SHOULD BE A RATE OF LESS THAN 60 FT/SEC, WITH NO RIDGES LEFT.

(6) 604-10.18 INCLUDES COST OF REINFORCING STEEL REQUIRED FOR THE APPROACH SLAB AND SLEEPER SLAB REPAIR AT BOTH APPROACHES OF THE WESTBOUND LANES ON BRIDGE NO. 19-I0040-13.64 AND BRIDGE NO. 19-I0040-13.76. FOR DETAILS, SEE DWG. NOS. BR-131-419, BR-131-420, BR-131-421, BR-131-423, AND BR-131-424.

(7) 604-10.42 INCLUDES COST OF ALL LABOR, EQUIPMENT AND MATERIALS, EXCLUDING REINFORCING STEEL, REQUIRED TO POUR HIGH EARLY STRENGTH CONCRETE AT THE APPROACH SLAB AND SLEEPER SLAB AT BOTH APPROACHES OF THE WESTBOUND LANES ON BRIDGE NO. 19-I0040-13.64 AND BRIDGE NO. 19-I0040-13.76. THIS ITEM SHALL INCLUDE CLEANING AND STRAIGHTENING PORTIONS OF EXISTING REINFORCING TO BE INCORPORATED INTO NEW WORK. ALL WORK FOR THIS PAY ITEM SHALL BE DONE USING HIGH EARLY STRENGTH CONCRETE. CONCRETE USED SHALL REACH 3,000 PSI COMPRESSIVE STRENGTH BEFORE LOADING AND WITHIN 12 HOURS MAXIMUM. FOR NOTES AND DETAILS, SEE DWG. NOS. BR-131-418 THRU BR-131-424.

(8) 604-10.44 INCLUDES COST OF ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO REMOVE THE EXISTING APPROACH SLAB, END BLOCK AND JOINT, PLACE NEW STRUCTURAL STEEL, WELD, AND PROVIDE NEW CONTINUOUS ELASTOMERIC BEARING PAD AND NEW JOINT SYSTEM AT BOTH APPROACHES OF THE WESTBOUND LANES ON BRIDGE NO. 19-I0040-13.64 AND BRIDGE NO. 19-I0040-13.76. FOR NOTES AND DETAILS, SEE DWG. NOS. BR-131-418 THRU BR-131-424.

(9) 604-10.51 INCLUDES ALL COST OF LABOR AND EQUIPMENT TO HYDRO-DEMO 1½" OF THE EXISTING BRIDGE DECK AT BRIDGE NO. 19-I0040-13.64 AND 19-I0040-13.76.

(10) 604-12.15 INCLUDES ALL COST OF LABOR AND MATERIALS, EXCLUDING REINFORCING STEEL, REQUIRED FOR THE DRILLING AND GROUTING OF REINFORCING BARS ON BRIDGE NO. 19-I0040-13.64 AND BRIDGE NO. 19-I0040-13.76. NON-SHRINK, FLOWABLE GROUT TO BE USED FOR THE DRILLING AND GROUTING BARS. SEE NOTES AND DETAILS ON DWG. NOS. BR-131-420, BR-131-421, BR-131-423 AND BR-131-424.

(11) 712-02.60 THIS ITEM SHALL BE A PORTABLE ENERGY ABSORBING TERMINAL MEETING THE REQUIREMENTS OF AASHTO MASH FOR TEST LEVEL 3. THE PAY ITEM WILL INCLUDE FURNISHING AND INSTALLING ALL COMPONENTS AS LISTED ON THE MANUFACTURER'S BILL OF MATERIALS.

(12) 712-08.10 VALUE BASED ON ASSUMED 6 TRUCKS USED FOR SEVEN (7) 8-HOUR DAYS. SEE SPECIAL PROVISION SP712PTQ FOR MORE DETAIL.

(13) 740-07.04 INCLUDES COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED FOR PLACEMENT OF GEOGRID REINFORCEMENT (TYPE 2) BEHIND BACKWALLS AT ABUTMENTS 1 & 2 OF BOTH BRIDGES. FOR NOTES AND DETAILS, SEE DWG. NO. BR-131-418A AND STD. DWG. NO. STD-10-2.

(14) 740-10.04 INCLUDES COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED FOR PLACEMENT OF GEOTEXTILE (TYPE IV) (STABILIZATION) BEHIND BACKWALLS AT ABUTMENTS 1 & 2 OF BOTH BRIDGES. FOR NOTES AND DETAILS, SEE DWG. NO. BR-131-418A AND STD. DWG. NO. STD-10-2.

(15) THE COST OF RELOCATING THE LISTED ITEMS DURING TRAFFIC CONTROL PHASES SHALL BE INCLUDED IN THE PRICE FOR THIS ITEM.

(16) THE ENGINEER MAY INCREASE OR DECREASE THE QUANTITY FOR THIS ITEM.

(17) THE BRIDGE MOUNTED INTERCONNECTED PORTABLE BARRIER RAIL SHALL HAVE THE ALTERNATE CONNECTION IN ACCORDANCE WITH STD. DWG. T-WZ-PCB3.

(18) TO BE USED ALONG I-40 AND I-440 DURING WEEKEND CLOSURES AND ALONG LOCAL ROADS AND 40TH AVENUE N. DURING SHORT DURATION, TEMPORARY ROAD CLOSURES ON 40TH AVENUE N. ITEMS SHALL BE USED AND LOCATED AT THE ENGINEER'S DISCRETION.

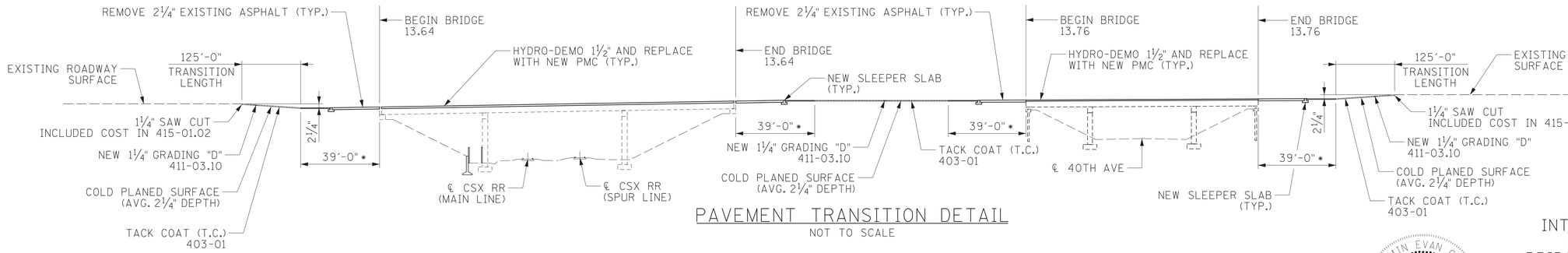
(19) THE ENGINEER MAY INCREASE OR DECREASE THE QUANTITY FOR THIS ITEM.

(20) TO BE PLACED AT THE ENGINEER'S DISCRETION.

(21) THE CONTRACTOR HAS THE OPTION TO UTILIZE PRECAST ELEMENTS FOR APPROACH SLAB REPLACEMENT. DETAILS AND DESIGNS FOR PRECAST ELEMENTS SHALL BE SUBMITTED TO AND APPROVED BY THE DEPARTMENT PRIOR TO CONSTRUCTION.

ESTIMATED BRIDGE QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	13.64	13.76	TOTAL QUANTITY
(1)	204-02.01	DRY EXCAVATION (BRIDGE NOS. 19-I0040-13.64 & 13.76)	C.Y.	629.9	653.4	1283.3
	303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	129.4	134.3	263.7
(2)	303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	560.1	581	1141.1
	307-03.01	ASPHALT CONCRETE MIX (PG76-22) (BPMB-HM) GRADING A	TON	39.6	41.1	80.7
	307-03.08	ASPHALT CONCRETE MIX (PG76-22) (BPMB-HM) GRADING B-M2	TON	26	26.9	52.9
	402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	0.4	0.4	0.8
	402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	1.2	1.2	2.4
	403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	1	1	2
(3)	406-04.01	POLYMER MODIFIED EPOXY PAVEMENT OVERLAY	S.Y.	1613	1013	2626
	411-03.10	ACS MIX(PG76-22) GRADING D	TON	179.2	185.9	365.1
(4)	415-01.02	COLD PLANING BITUMINOUS PAVEMENT	S.Y.	2521	2567	5088
	604-05.31	BRIDGE DECK GROOVING (MECHANICAL)	S.Y.	2007	1421	3428
(5)	604-10.14	REMOVE EXISTING WEARING SURFACE	LS	0.5	0.5	1
(6)	604-10.18	REINFORCING STEEL (REPAIRS)	LB.	25837	25720	51557
(9)	604-10.20	HYDRODEMOLITION	S.Y.	1613	1013	2626
(21)(7)	604-10.42	CONCRETE REPAIRS	C.F.	4159	4270	8429
(8)	604-10.44	EXPANSION JOINT REPAIRS	L.F.	162	156	318
(10)	604-12.15	DRILL AND GROUT STEEL BARS	EACH	150	156	306
	712-01	TRAFFIC CONTROL	LS	--	--	1
(17)(16)(15)	712-02.12	PORTABLE BARRIER RAIL, REDUCED DEFLECTION (MASH TL-3)	L.F.	--	--	1800
(15)(11)	712-02.60	TEMPORARY WORK ZONE CRASH CUSHION (MASH TL-3)	EACH	--	--	1
(16)(15)	712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	--	--	200
(16)(15)	712-04.50	BARRIER RAIL DELINEATOR	EACH	--	--	59
(16)(15)	712-06	SIGNS (CONSTRUCTION)	S.F.	--	--	1362
	712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	--	--	72
(15)	712-08.03	ARROW BOARD (TYPE C)	EACH	--	--	3
(16)(15)(12)	712-08.10	MOBILE MESSAGE SIGN UNIT W/ATTENUATOR	HOUR	--	--	1008
(19)(20)	712-08.12	QUEUE PROTECTION TRUCK	DAY	--	--	60
(16)	712-09.02	REMOVABLE PAVEMENT MARKING (8" BARRIER LINE)	L.F.	--	--	11915
(16)	712-09.08	REMOVABLE PAVEMENT MARKING (6" LINE)	L.F.	--	--	11635
(16)	712-09.30	REMOVABLE BLACK-OUT TAPE (6")	L.F.	--	--	11635
(18)	713-16.01	CHANGEABLE MESSAGE SIGN UNIT	EACH	--	--	20
	716-01.11	RAISED PVMT MARKERS (BI-DIRECTIONAL) (1 COLOR LENS)	EACH	--	--	167
	716-01.14	RAISED PAVEMENT MARKER REMOVAL	EACH	--	--	43
	716-01.23	SNOW PLOWABLE RAISED PAVEMENT MARKERS (BI-DIR) (2 COLOR)	EACH	--	--	43
(16)	716-12.02	ENHANCED FLATLINE THERMO PVMT MRKNG (6IN LINE)	L.M.	--	--	0.7
	717-01	MOBILIZATION	LS	--	--	1
(13)	740-07.04	GEOGRID REINFORCEMENT TYPE 2	S.Y.	1382	1430	2812
(14)	740-10.04	GEOTEXTILE (TYPE IV) (STABILIZATION)	S.Y.	694	719	1413



PAVEMENT TRANSITION DETAIL

NOT TO SCALE

* 39'-0" APPROACH SLAB REPAIR. FOR ADDITIONAL DETAILS OF APPROACH SLAB AND PAVEMENT REPLACEMENT SEE DWG. NO. BR-131-418A.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ESTIMATED QUANTITIES

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES
B. Evan Graves
REGISTERED ENGINEER
STATE OF TENNESSEE
03/30/2026

DESIGNED BY	Rawleigh S. Richardson Jr.	DATE 2/2/24
DRAWN BY	Rawleigh S. Richardson Jr.	DATE 2/2/24
SUPERVISED BY	Benjamin E. Graves	DATE 2/2/24
CHECKED BY	Lane M. Decker	DATE 2/2/24

HDR

BR-131-416

GENERAL NOTES

1. SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (APRIL 1, 2026 EDITION), AND THE 4TH EDITION (2017) AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS WITH INTERIMS.

2. DESIGN SPECIFICATIONS: 10TH EDITION (2024) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE 2ND EDITION (2011) AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN WITH INTERIMS.

3. STRUCTURAL STEEL: SHALL CONFORM TO ASTM A709 GRADE 50 UNLESS OTHERWISE NOTED. ALL STRUCTURAL STEEL FOR GIRDER FLANGES IN TENSION AND ALL WEBS SHALL MEET THE SUPPLEMENTAL REQUIREMENTS FOR LONGITUDINAL CHARPY V-NOTCH TESTS SPECIFIED IN THE ASTM SPECIFICATIONS. ZONE 2 OF NON-FRACTURE CRITICAL CRITERIA SHALL APPLY.

4. REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

5. NOTE: MECHANICAL BAR SPLICERS MUST BE ON THE TDOT QUALIFIED PRODUCTS LIST 27. THE BAR SPLICERS SHALL MEET AASHTO LRFD SPECIFICATIONS FOR MECHANICAL CONNECTION. WHEN EPOXY COATING IS REQUIRED, THE EXPOSED THREADS SHALL BE REPAIRED AFTER SPLICING ACCORDING TO SECTION 907 OF THE STANDARD SPECIFICATIONS. THE COST OF FURNISHING THE BAR SPLICERS, (AND EPOXY COATING WHEN REQUIRED) INCLUDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE INSTALLATION, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM NO. 604-10.18, UNLESS OTHERWISE NOTED IN PLANS.

6. CONCRETE: TO BE CLASS "A" (CAST-IN-PLACE) F'C = 3000 PSI EXCEPT AS NOTED OTHERWISE.

7. HIGH EARLY STRENGTH CONCRETE: THE MIX IS TO MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, CLASS "X". THE CEMENT CONTENT SHALL BE A MINIMUM OF 714 LBS. THE WATER-CEMENT RATIO SHALL BE A MAXIMUM OF 0.40. DESIGN AIR CONTENT SHALL BE 6% WITH ±2% ACCEPTANCE RANGE IN THE FIELD. SLUMP SHALL BE 3±1 INCHES. IF USING A TYPE A, F, OR G WATER REDUCER, THE SLUMP SHALL BE MAXIMUM OF 8 INCHES. NO FLY ASH REPLACEMENT WILL BE PERMITTED. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 3,500 PSI. TRAFFIC SHALL NOT BE PERMITTED ON ANY OF THE REPAIRED AREAS UNTIL TEST SPECIMENS ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AND THE CONCRETE HAS BEEN IN PLACE A MINIMUM OF TEN (10) DAYS.

8. PAVEMENT AT BRIDGE ENDS SURFACE FINISH: TO BE IN ACCORDANCE WITH METHOD 3 IN ARTICLE 604.22 OF THE STANDARD SPECIFICATIONS.

9. CONCRETE CURING: ALL CONCRETE IN REPAIR AREAS SHALL BE CURED ACCORDING TO THE STANDARD SPECIFICATIONS.

10. EXPANSION JOINTS: FOR ADDITIONAL GENERAL NOTES APPLICABLE TO STRIP SEAL EXPANSION JOINTS, SEE STANDARD DRAWING NOS. SBR-2-115 AND SBR-2-116, ALSO SEE SECTION 623 OF THE STANDARD SPECIFICATIONS.

11. DEMOLITION: THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ANY PARTS OF THE STRUCTURE THAT ARE NOT TO BE REMOVED SPECIFICALLY. FOR FULL DEPTH SLAB REMOVAL, EXCEPT OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 90 POUND CLASS. FOR PARTIAL DEPTH SLAB REMOVAL AND ANY WORK OVER THE BEAMS, THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS; CHIPPING HAMMERS OF THE 15 POUND CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL. SAWING OR CUTTING OF THE CONCRETE IS ACCEPTABLE AS LONG AS ANY SPECIFIED PROJECTION OF THE EXISTING REINFORCING STEEL IS MAINTAINED. EXPANSION JOINT REMOVAL SHALL FOLLOW THE SAME RESTRICTIONS AS FULL DEPTH SLAB REMOVAL. ALL DEVICES PROPOSED FOR CONCRETE DEMOLITION SHALL MEET THE APPROVAL OF THE ENGINEER.

12. GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED ½" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR ROTATED (NOT DRIVEN) TO ITS SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT, AND THE BAR DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY TDOT MATERIALS AND TESTS.

13. SPECIAL NOTE FOR RAILROAD CROSSINGS: THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE DONE IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE CSX RAILROAD SO AS TO MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC.

PAVEMENT MARKINGS

FINAL PAVEMENT MARKINGS

PERMANENT PAVEMENT LINE MARKINGS SHALL BE 6" ENHANCED FLATLINE THERMOPLASTIC INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT UNMARKED SECTIONS SHALL NOT BE ALLOWED. PAVEMENT MARKINGS WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 716-12.02, ENHANCED FLATLINE THERMO PVMT MRKNG (6IN LINE), L.M. THE CONTRACTOR SHALL HAVE THE OPTION OF USING REFLECTORIZED PAINT INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK AND THEN INSTALLING THE PERMANENT MARKINGS AFTER THE PAVING OPERATION IS COMPLETED. THE TEMPORARY MARKINGS FOR THE FINAL SURFACE WILL NOT BE MEASURED AND PAID FOR DIRECTLY, BUT THE COSTS ARE TO BE INCLUDED IN THE PRICE BID FOR THE PERMANENT MARKINGS.

DISTURBED AREA

CLEARING, GRUBBING, AND OTHER DISTURBANCE TO VEGETATION SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR SLOPE CONSTRUCTION AND EQUIPMENT OPERATIONS. EXISTING VEGETATION SHOULD BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE. UNNECESSARY VEGETATION REMOVAL IS PROHIBITED.

ALL DISTURBED AREAS SHALL BE PROPERLY STABILIZED AS SOON AS PRACTICAL. PRIORITY SHALL BE GIVEN TO FINISHING OPERATIONS AND PERMANENT EPSC MEASURES OVER TEMPORARY EPSC MEASURES.

CONSTRUCTION SHALL BE SEQUENCED AND STAGED TO MINIMIZE THE EXPOSURE TIME OF GRADED OR DENUDED SOIL AREAS, PRESERVE TOPSOIL, AND MINIMIZE SOIL COMPACTION.

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

HDR

CSXT RAILROAD NOTES

COMPLY WITH THE CONSTRUCTION SUBMISSION CRITERIA OF THE CSXT PUBLIC INFORMATION DOCUMENT AND CONSTRUCTION REQUIREMENTS OF THE PUBLIC PROJECTS MANUAL, WHICH IS AVAILABLE AT THE FOLLOWING URL: HTTPS://WWW.CSX.COM/INDEX.CFM/ABOUT-US/PROPERTY/

ALL WORK IN THE FRA RED ZONE (WITHIN 4 FEET FROM OUTSIDE OF THE RAIL ON EACH SIDE OF THE TRACK) WILL BE ALLOWED ONLY WITH A CSXT, FRA QUALIFIED FLAGMAN OR WATCHMAN AS SPECIFIED BY THE LOCAL ENGINEERING REPRESENTATIVE.

ALL WORK BEYOND 4 FEET FROM THE OUTSIDE RAILS AND WITHIN 25 FEET MUST BE DONE UNDER THE SUPERVISION OF A QUALIFIED INSPECTOR OR CSXT FLAGMAN.

CERTAIN TYPES OF WORK DONE BEYOND 25 FEET FROM THE OUTSIDE OF THE RAILS, AND WITH EQUIPMENT THAT WILL NOT REACH BEYOND THIS POINT, MAY BE DONE WITHOUT FLAGGING PROTECTION OR A WATCHMAN. THIS MUST BE APPROVED BY THE LOCAL ENGINEERING REPRESENTATIVE, THE AREA MUST BE PROTECTED BY A CONSTRUCTION FENCE, AND THE WORK MUST BE STATIONARY

ALL WORKERS WILL REMAIN OFF THE TRACKS. IF NECESSARY TO PERFORM THE WORK ON TRACK, PROTECTION WILL BE PROVIDED AS STATED ABOVE.

ALL WORKERS MUST COMPLY WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THOSE OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE FEDERAL RAILROAD ADMINISTRATION (FRA).

AT LEAST THIRTY (30) DAYS ADVANCED NOTIFICATION MUST BE GIVEN TO THE RAILROAD REPRESENTATIVE, TO SCHEDULE A RAILROAD FLAGMAN.

THE CONTRACTOR MAY NOT USE CSXT RIGHT-OF-WAY, FOR STORAGE OF MATERIALS OR EQUIPMENT, WITHOUT PRIOR WRITTEN APPROVAL FROM CSXT.

THE CONTRACTOR SHALL CONDUCT ITS WORK AT ALL TIMES, IN A MANNER WHICH WILL PROTECT CSXT'S PROPERTY AND TRACK FACILITIES FROM DAMAGE AND WITHOUT INTERRUPTION TO TRAIN OPERATIONS

CONTRACTOR SHALL MAINTAIN ALL DITCHES AND DRAINAGE STRUCTURES FREE OF SILT OR OTHER OBSTRUCTIONS THAT MAY RESULT FROM THEIR OPERATIONS. CONTRACTOR, UPON COMPLETION OF THE PROJECT, SHALL LEAVE CSXT PROPERTY IN A NEAT CONDITION, SATISFACTORY TO THE CSXT REPRESENTATIVE.

PRIOR TO THE INSTALLATION OF ANY SIGNAGE WITHIN CSXT RIGHT-OF-WAY, CONTRACTORS MUST CONTACT THE RAILROAD'S REPRESENTATIVE FOR LOCATION OF ALL UNDERGROUND SIGNAL UTILITIES.

ANY VIOLATION OF ANY CSXT RULES, REGULATIONS OR POLICIES, MAY RESULT IN REMOVAL OF CONTRACTOR PERSONNEL FROM THE RIGHT-OF-WAY.

NO CRANE OR BOOM EQUIPMENT SHALL BE ALLOWED TO SET UP TO WORK OR PARK WITHIN BOOM DISTANCE PLUS 15 FEET OF THE CENTERLINE OF TRACK WITHOUT SPECIFIC PERMISSION FROM THE RAILROAD. NO CRANE OR BOOM EQUIPMENT SHALL BE ALLOWED TO FOUL TRACK, WORK WITHIN THE FOUL ZONE, OR LIFT A LOAD OVER THE TRACK WITHOUT FLAGGING PROTECTION AND PERMISSION FOR TRACK TIME FROM THE RAILROAD.

ALL WORKMEN AND MACHINE OPERATORS SHALL STAY WITH THEIR MACHINES WHEN CRANE OR BOOM EQUIPMENT IS POINTED TOWARD THE TRACK. ALL CRANES AND BOOM EQUIPMENT SHALL STOP WORK AND CLEAR TRACK WHILE TRAIN IS PASSING. SWINGING LOADS SHALL BE SECURED TO PREVENT MOVEMENT WHILE TRAIN IS PASSING AND NO LOADS SHALL BE SUSPENDED ABOVE A MOVING TRAIN. ALL CRANES AND BOOM EQUIPMENT SHALL BE TURNED AWAY FROM THE TRACK AFTER EACH WORKDAY OR WHENEVER UNATTENDED BY AN OPERATOR.

ALL WORK MUST BE STOPPED WHILE TRAINS ARE PASSING WITHIN THE WORK ZONE.

CONSTRUCTION CLEARANCES SHALL BE SUBJECT TO APPROVAL BY CSXT. TYPICALLY, REDUCTION IN CLEARANCE FOR CONSTRUCTION IS NOT PERMITTED.

FALSEWORK, NETTING OR OTHER SUITABLE PROTECTION SHALL BE PROVIDED TO PREVENT DEBRIS FROM FALLING ON THE TRACK DURING DEMOLITION AND CONSTRUCTION OPERATIONS

THE CONTRACTOR SHALL REFERENCE THE CSXT CONSTRUCTION SUBMISSION CRITERIA FOR CONSTRUCTION RELATED SUBMITTAL REQUIREMENTS WHILE WORKING ON, OVER, UNDER OR ADJACENT TO CSXT RIGHT-OF-WAY. THE CONSTRUCTION SUBMISSION CRITERIA CAN BE FOUND WITHIN THE PUBLIC PROJECT MANUAL. THE CONTRACTOR IS REQUIRED TO SUBMIT A DETAILED WORK PLAN FOR REVIEW AND APPROVAL BY CSXT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING ITEMS: A) HOISTING OPERATIONS B) DEMOLITION PROCEDURES C) ERECTION PROCEDURES D) TRACK MONITORING

"ONE CALL" SERVICES DO NOT LOCATE BURIED RAILROAD SIGNAL AND COMMUNICATIONS LINES. THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE FIVE (5) DAYS IN ADVANCE OF THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE RAILROAD UNDERGROUND LINES ON RAILROAD PROPERTY. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND PAINT MARK OR FLAG RAILROAD UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED FOR THE CONTRACTOR. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE LINES WHICH ARE CRITICAL TO THE SAFETY OF THE RAILROAD AND THE PUBLIC. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD SIGNAL, COMMUNICATION, OR POWER LINE, THE LINE SHALL BE POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION BY THE CONTRACTOR AND PROTECTED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF A RAILROAD SIGNAL REPRESENTATIVE.

ALL SOILS EXCAVATED WITHIN CSXT'S RAILROAD RIGHT-OF-WAY SHALL REMAIN ON CSXT'S RIGHT-OF-WAY. TESTING OF SOILS ON CSXT ROW IS PROHIBITED WITHOUT PRIOR WRITTEN CSXT AUTHORIZATION. ANY SOILS EXCAVATED ON CSXT ROW CAN BE REUSED ON THE ROW PROVIDED PLACING SOILS ALONG CSXT ROW POSES NO ADVERSE IMPACTS TO THE EXISTING TERRAIN, DRAINAGE OR ENVIRONMENT. SHOULD SOIL NEED TO BE REMOVED FROM CSXT ROW, THE CSXT ENVIRONMENTAL DEPARTMENT WILL SAMPLE THE SOIL FOR DISPOSITION. SOIL STAGED ON CSXT MUST FOLLOW CSXT PROTOCOL AND BE PROPERLY STORED AND/OR PROTECTED FROM THE ELEMENTS AND POTENTIAL EXPOSURE.

THE CONTRACTOR SHALL NOTIFY AND COORDINATE THEIR WORK WITH THE FOLLOWING CSXT REPRESENTATIVE:

CROUCH ENGINEERING, INC.
5115 MARYLAND WAY, SUITE 225
BRENTWOOD, TN 37027
ATTN: MR. SCOTT VICK, P.E.
PHONE: 615-791-0630
EMAIL: SVICK@CROUCHENGINEERING.COM

RAILROAD NOTES CONT.

A BALLAST PROTECTION SYSTEM CONSISTING OF GEOFABRIC OR CANVAS SHALL BE PLACED OVER THE TRACK STRUCTURE TO KEEP THE BALLAST CLEAN AND SHALL EXTEND 25'-0" BEYOND CONSTRUCTION AND DEMOLITION LIMITS.

MISCELLANEOUS

NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS ALONG THE PROPOSED CONSTRUCTION AREA.

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	3

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

UTILITY NOTES

THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED.

UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT.

THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.

PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF THE WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED 'AROUND' UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS. ADVANCE CLEAR CUTTING MAY BE REQUIRED BY THE ENGINEER AT ANY LOCATION WHERE CLEARING IS CALLED FOR IN THE SPECIFICATIONS AND CLEAR CUTTING IS NECESSARY FOR A UTILITY RELOCATION. ANY ADDITIONAL COST WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CLEARING ITEM SPECIFIED IN THE PLANS.

THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL OWNER OF HIS PLAN OF OPERATION IN THE AREA OF UTILITIES. PRIOR TO COMMENCING THE WORK, THE CONTRACTOR SHALL CONTACT OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY.

SOME UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC., AT 1-800-351-1111.

UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT. ON CONTRACTS WHERE CONSTRUCTION STAKES, LINES AND GRADES ARE A CONTRACT ITEM, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE RIGHT-OF-WAY OR SLOPE STAKES, DITCH OR STREAM BED GRADES, OR OTHER ESSENTIAL SURVEY STAKING TO PREVENT CONFLICTS WITH THE HIGHWAY CONSTRUCTION. FREQUENTLY THIS WILL BE REQUIRED AS THE FIRST ITEM OF WORK, AND AT ANY LOCATION OF THE PROJECT DIRECTED BY THE ENGINEER.

☞ THE CONTRACTOR WILL MAINTAIN OSHA/TOSHA SAFE WORKING CLEARANCE FROM THE 13.8KV DISTRIBUTION LINE AT THE BRIDGE OVER 40TH AVE. N. AND THE 161KV TRANSMISSION LINE AT THE BRIDGE OVER CSX RR.

GALVANIZING OF NEW STEEL

ALL NEW STRUCTURAL STEEL SHALL BE GALVANIZED TO ASTM A123 STANDARDS.

13.64 13.76

GRADING

ANY AREA THAT IS DISTURBED OUTSIDE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES — REGISTERED ENGINEER — STATE OF TENNESSEE
B. Evan Graves
03/30/2026

BR-131-417

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	4
PS&E	2026	19103-4110-04	4

PROJECT COMMITMENTS

COMMITMENT ID	SOURCE DIVISION	DESCRIPTION	STA. / LOCATION
EDHZ001	ENVIRONMENTAL DIVISION, HAZARDOUS MATERIALS	AN ASBESTOS CONTAINING MATERIAL (ACM) SURVEY WAS COMPLETED ON BRIDGE NO. 19I00400039 I-40 OVER CSX RR NORTH LM 13.64 (19-I0040-13.64) AND BRIDGE NO. 19I00400041 I-40 OVER 40TH AVENUE NORTH LM 13.76 (19-I0040-13.76). NO ACM WAS DETECTED. PLEASE SEE THE REPORT FOR FURTHER DETAILS AND PHOTOGRAPHS. NO SPECIAL ACCOMMODATIONS FOR DEMOLITION AND WASTE DISPOSAL ARE ANTICIPATED FOR THESE STRUCTURES AND THE MATERIAL CAN BE DEPOSITED IN A C&D LANDFILL. PRIOR TO THE DEMOLITION OR REHABILITATION OF ANY STRUCTURE (BRIDGE OR BUILDING), THE CONTRACTOR IS REQUIRED TO SUBMIT THE NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS STANDARD 10-DAY NOTICE OF DEMOLITION TO THE TDEC DIVISION OF AIR POLLUTION CONTROL (PER TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (JANUARY 1, 2021) SECTIONS 107.08.D AND 202.03)	BRIDGE NOS. 19-I0040-13.64 19-I0040-13.76

SEALED BY

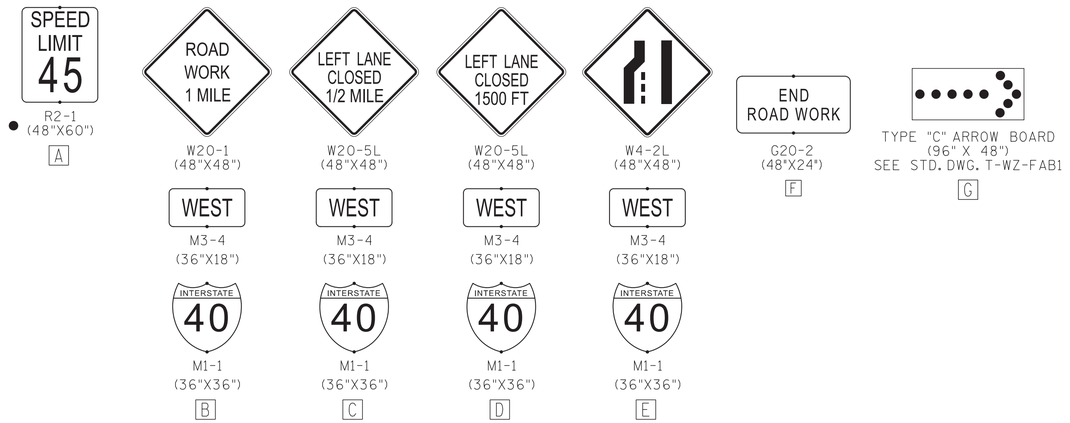
BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
B. Evan Graves
03/30/2026
STATE OF TENNESSEE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROJECT COMMITMENTS

$$$$$SYTIME$$$$$$$
$$ $$DGNSPEC$$ $$$$$$$$

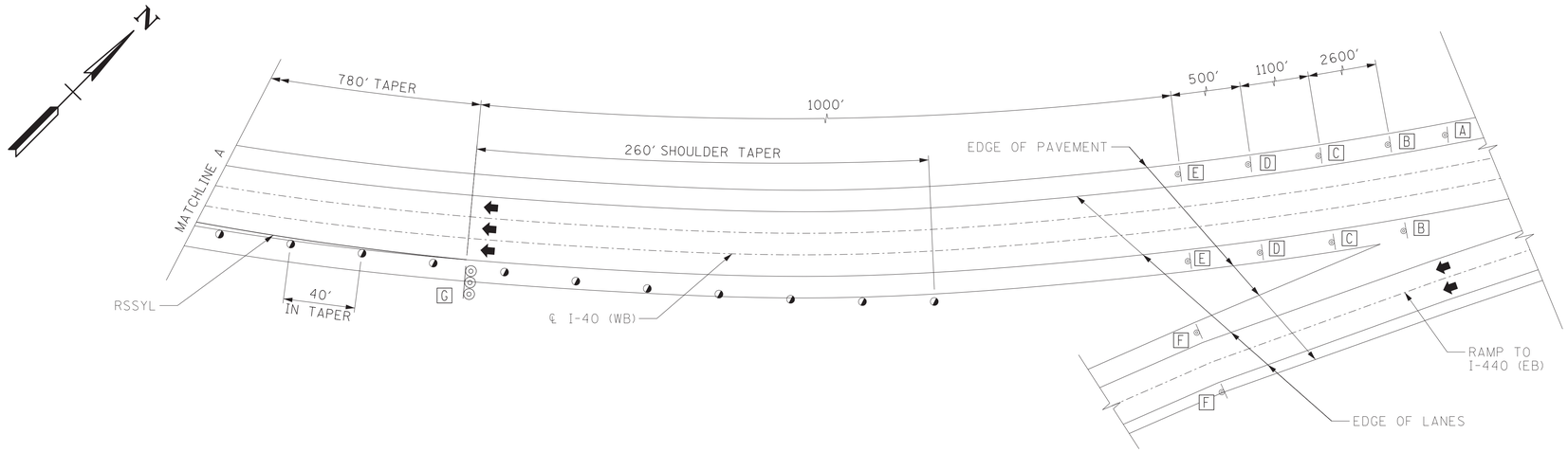
TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	5
PS&E	2026	19103-4110-04	5



TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSYL REMOVABLE SINGLE SOLID YELLOW LINE
- FLASHING ARROW BOARD (TYPE C)

● NOTE: ERECTION OF SPEED REDUCTION SIGNS WILL ONLY BE PERMITTED UPON WRITTEN REQUEST BY THE CONTRACTOR AND WRITTEN APPROVAL BY THE STATE TRAFFIC ENGINEER.



INTERSTATE 40 TRAFFIC CONTROL PHASE I - PART 1

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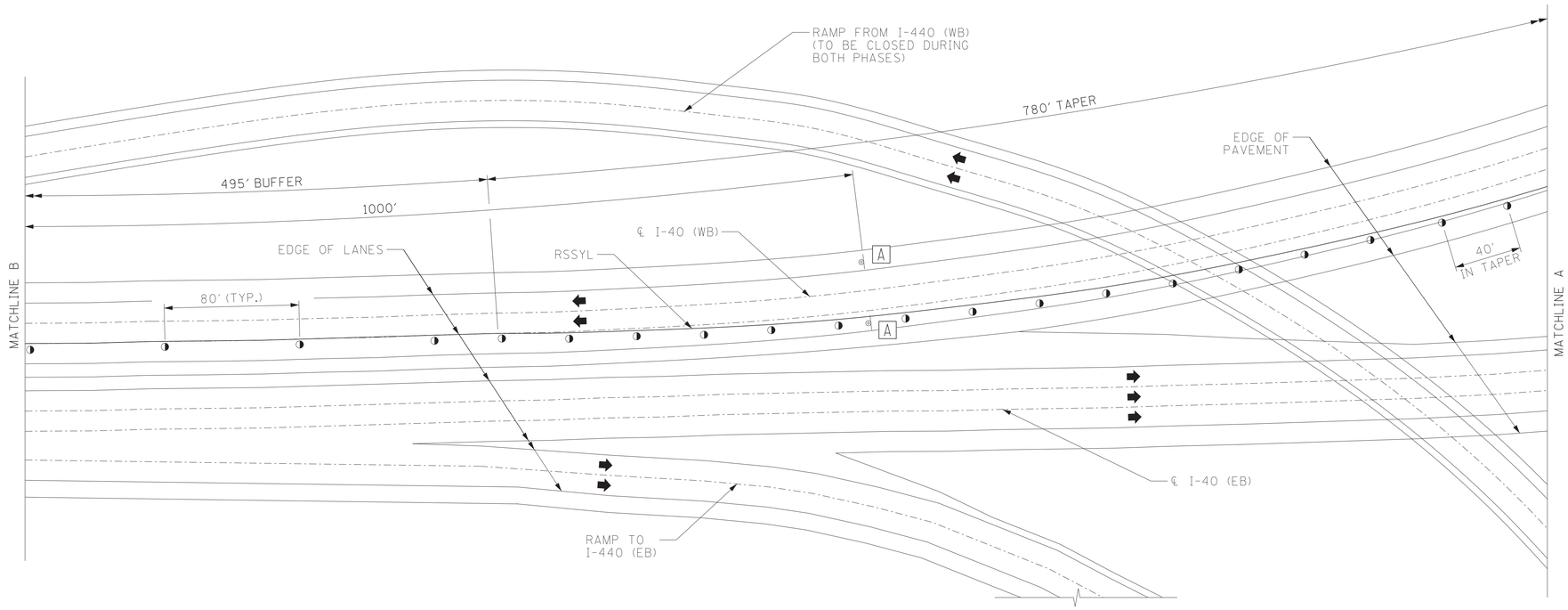
03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

$$$$SYTIME$$$$$$$
$$$DGNSPEC$$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	6
PS&E	2026	19103-4110-04	6



INTERSTATE 40 TRAFFIC CONTROL PHASE I - PART 2

NOT TO SCALE

TRAFFIC CONTROL LEGEND	
◑	FLEXIBLE DRUMS (CHANNELIZING)
⊙	SIGN
RSSWL	REMOVABLE SINGLE SOLID WHITE LINE
RSSYL	REMOVABLE SINGLE SOLID YELLOW LINE



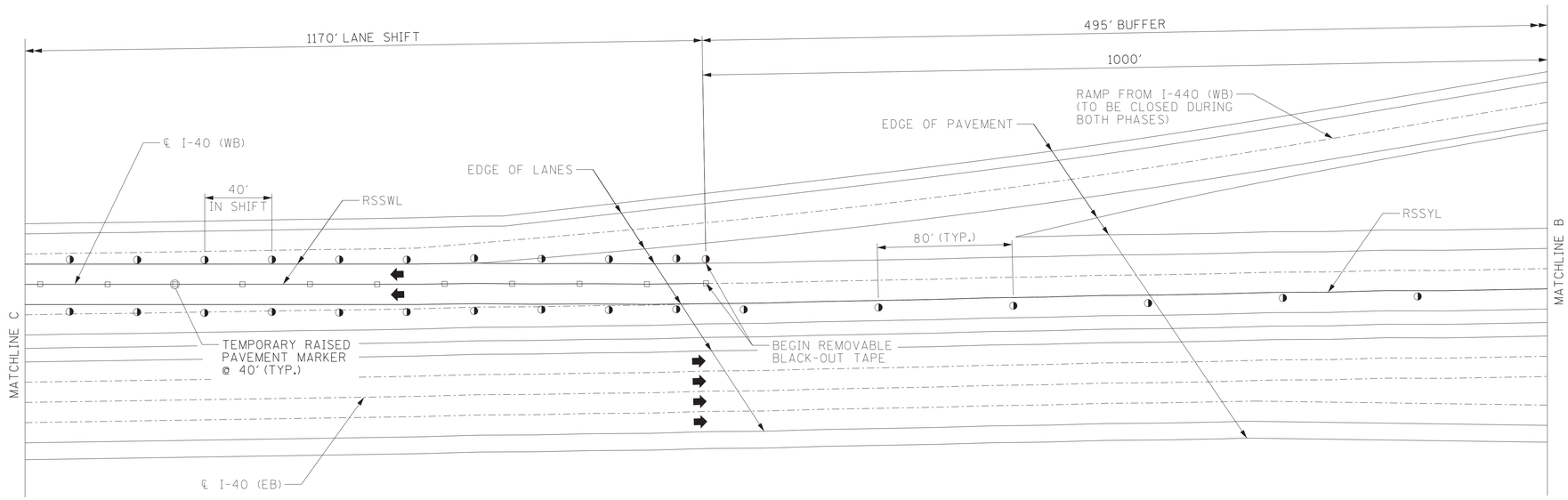
W1-4BR
(48"X48")





R4-9
(48"X60")

A



INTERSTATE 40 TRAFFIC CONTROL PHASE I - PART 3

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03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC
CONTROL
PLANS

$$$$SYTIME$$$$$$$
$$$DGNSPEC$$$$$$$

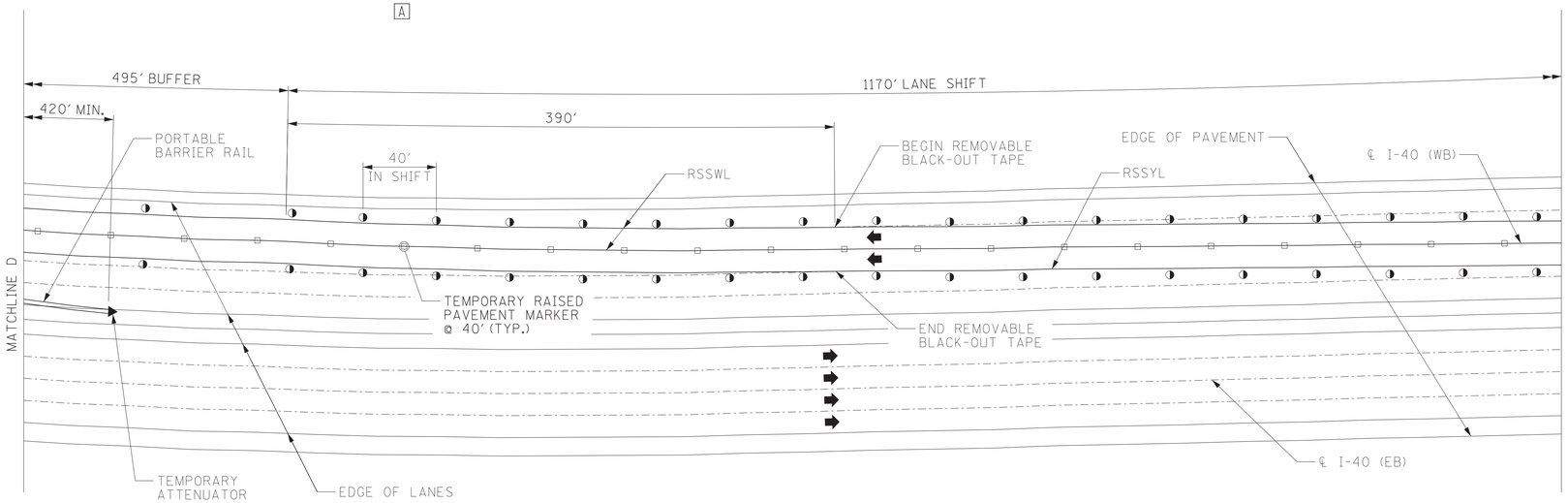
TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	7
PS&E	2026	19103-4110-04	7



W1-4BL
(48"X48")
A



SPECIAL 3
(312"X120")
B

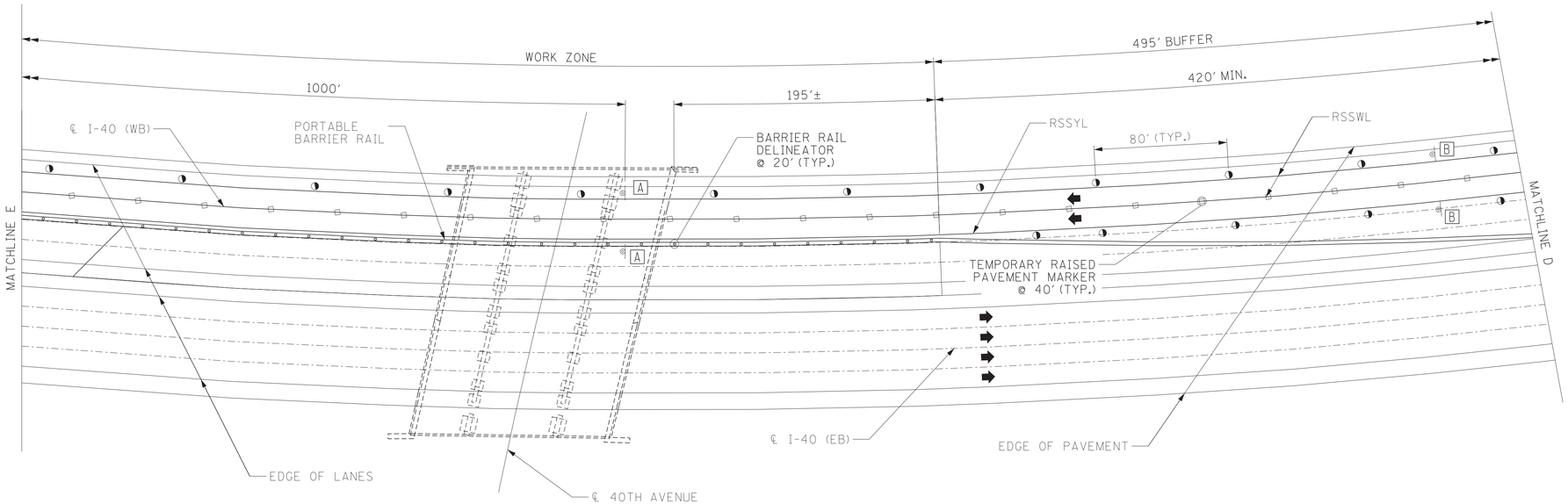


INTERSTATE 40 TRAFFIC CONTROL PHASE I - PART 4
NOT TO SCALE

TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSWL REMOVABLE SINGLE SOLID WHITE LINE
- RSSYL REMOVABLE SINGLE SOLID YELLOW LINE
- TEMPORARY ATTENUATOR
- WORKSPACE





INTERSTATE 40 TRAFFIC CONTROL PHASE I - PART 5
NOT TO SCALE

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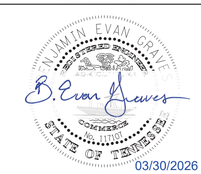


STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

$$$$SYTIME$$$$$$$
$$$$DGNSPEC$$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	8
PS&E	2026	19103-4110-04	8

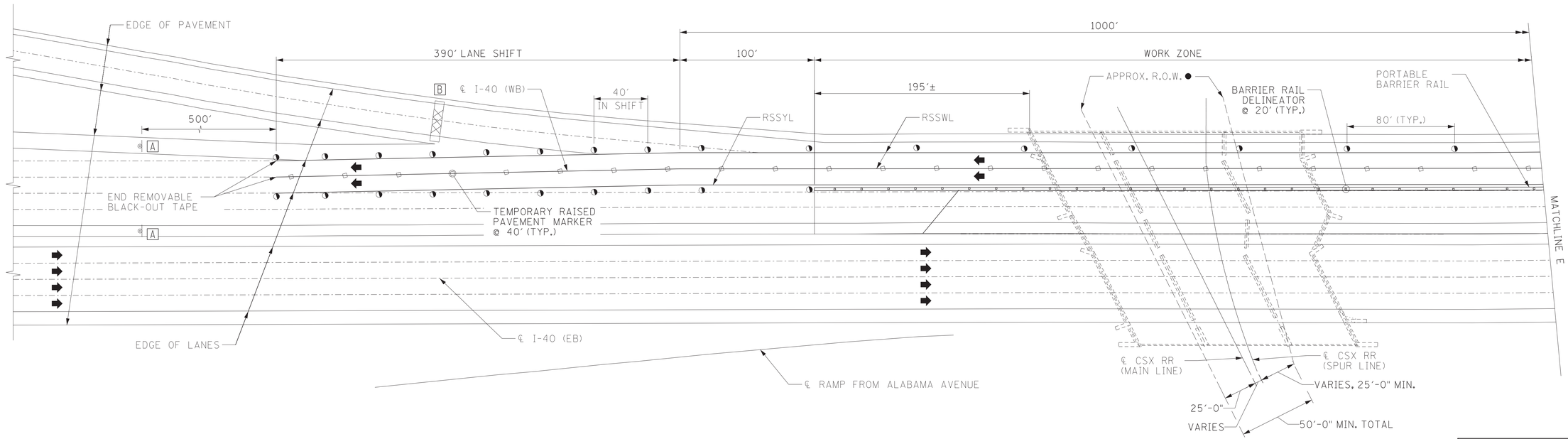
END
ROAD WORK
G20-2
(48"X24")
A

R11-2
(48"X30")
ROAD
CLOSED

TYPE III BARRICADE ROAD CLOSURE
B

TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSWL REMOVABLE SINGLE SOLID WHITE LINE
- RSSYL REMOVABLE SINGLE SOLID YELLOW LINE
- WORKSPACE



INTERSTATE 40 TRAFFIC CONTROL PHASE I - PART 6

NOT TO SCALE

● SURVEY NOT PROVIDED ON THIS PROJECT. R.O.W. ESTIMATED FROM ADJACENT PARCELS VIA METROGIS.

SEALED BY



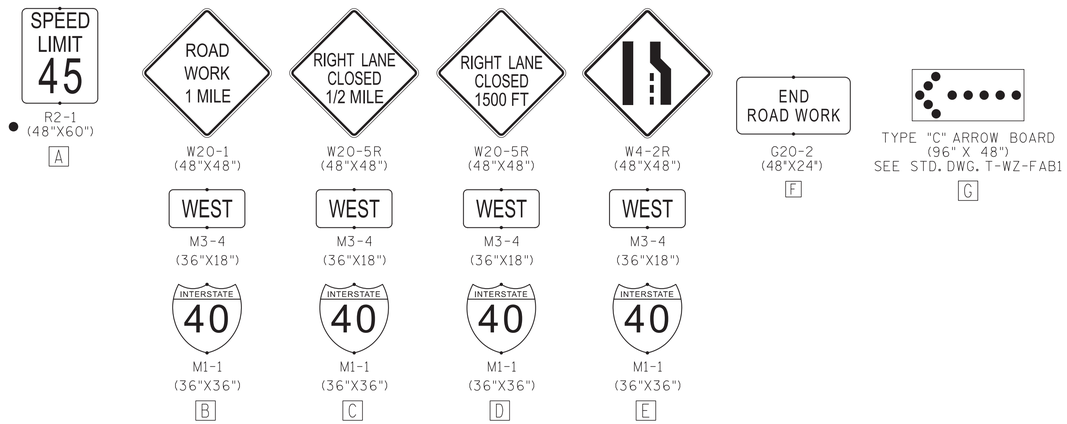
03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC
CONTROL
PLANS

$$$$SYTIME$$$$$$
$$ DGNSPEC $$

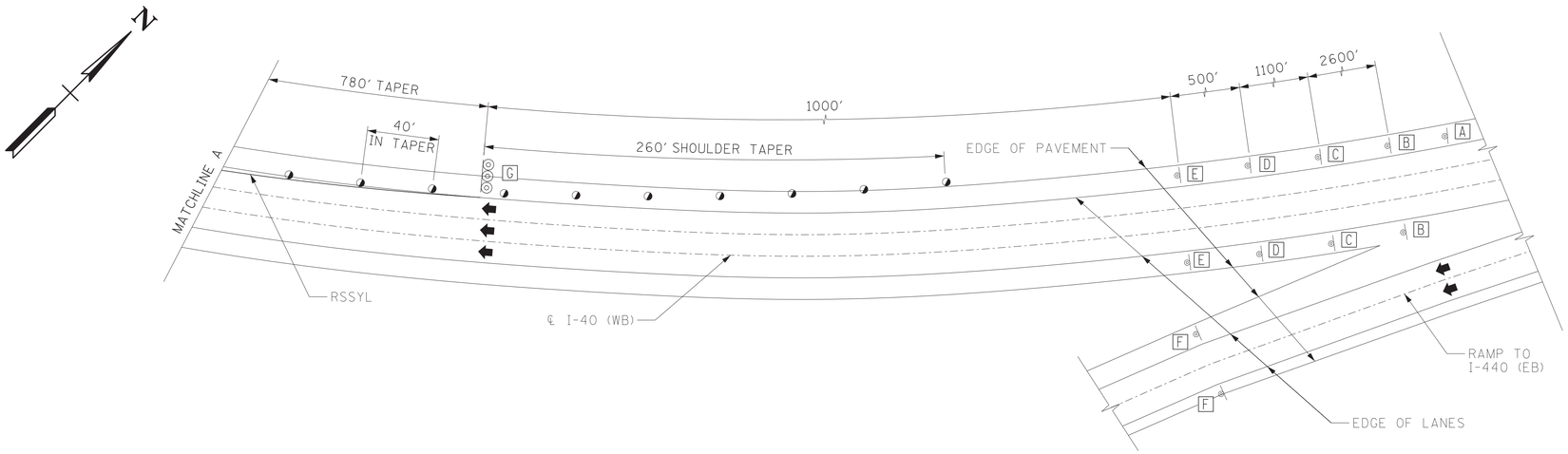
TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	9
PS&E	2026	19103-4110-04	9



TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSYL REMOVABLE SINGLE SOLID YELLOW LINE
- FLASHING ARROW BOARD (TYPE C)

● NOTE: ERECTION OF SPEED REDUCTION SIGNS WILL ONLY BE PERMITTED UPON WRITTEN REQUEST BY THE CONTRACTOR AND WRITTEN APPROVAL BY THE STATE TRAFFIC ENGINEER.



INTERSTATE 40 TRAFFIC CONTROL PHASE II - PART 1

NOT TO SCALE

SEALED BY

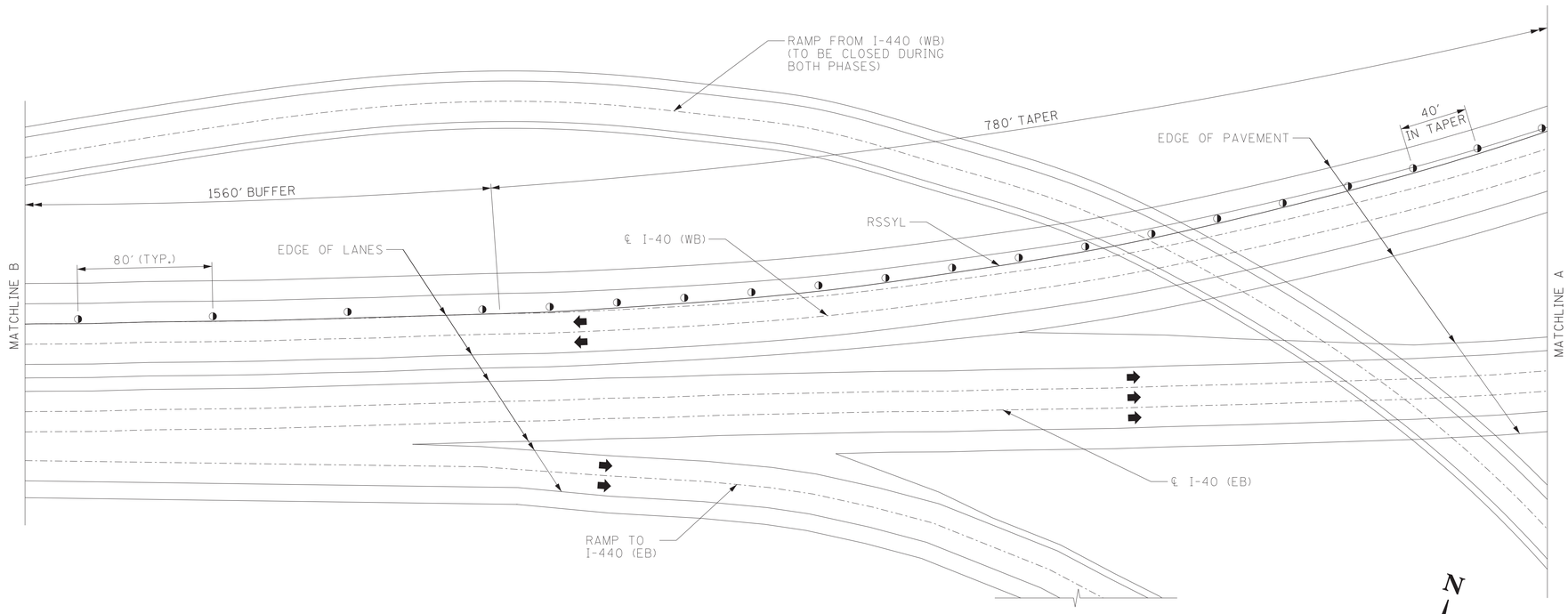
BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
B. Evan Graves
COMMISSIONED
STATE OF TENNESSEE
03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

$$$$SYTIME$$$$$$
$$$DGNSPEC$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	10
PS&E	2026	19103-4110-04	10



INTERSTATE 40 TRAFFIC CONTROL PHASE II - PART 2

NOT TO SCALE

TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSYL REMOVABLE SINGLE SOLID YELLOW LINE

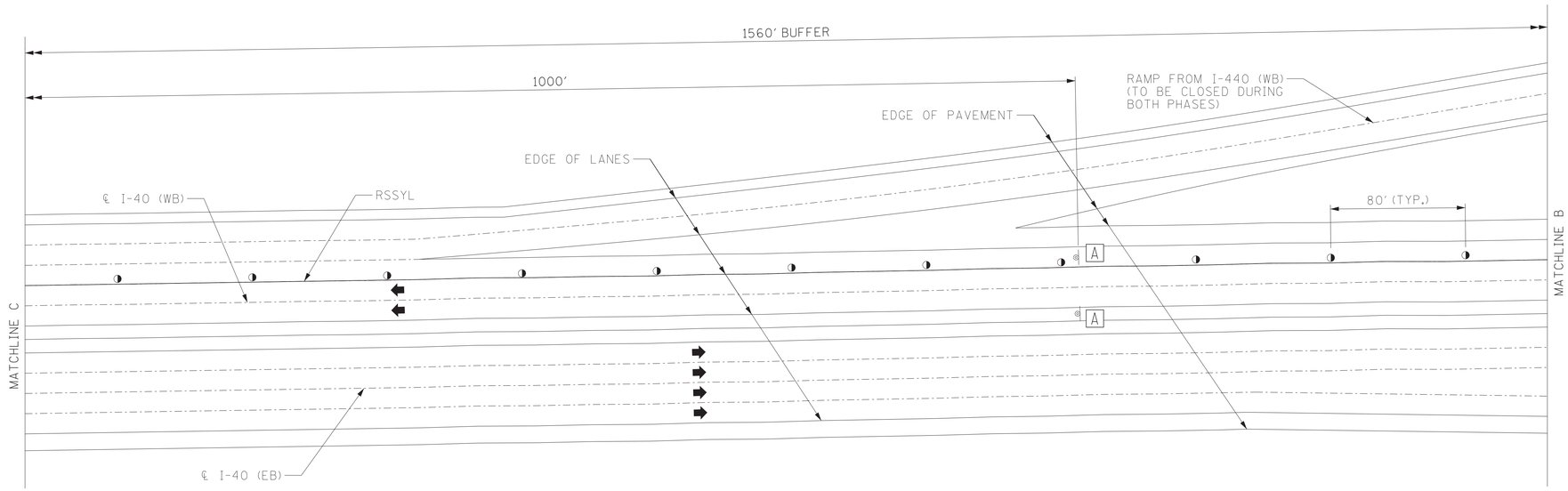


W1-4BL
(48"X48")



R4-9
(48"X60")
A

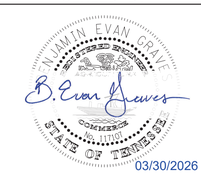




INTERSTATE 40 TRAFFIC CONTROL PHASE II - PART 3

NOT TO SCALE

SEALED BY



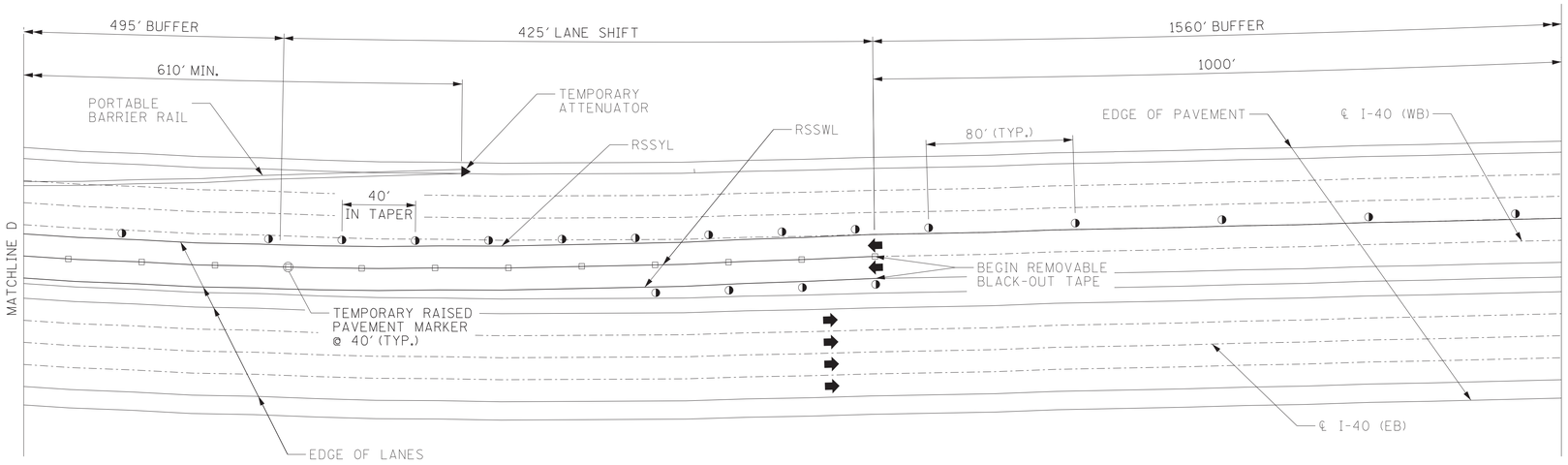
03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

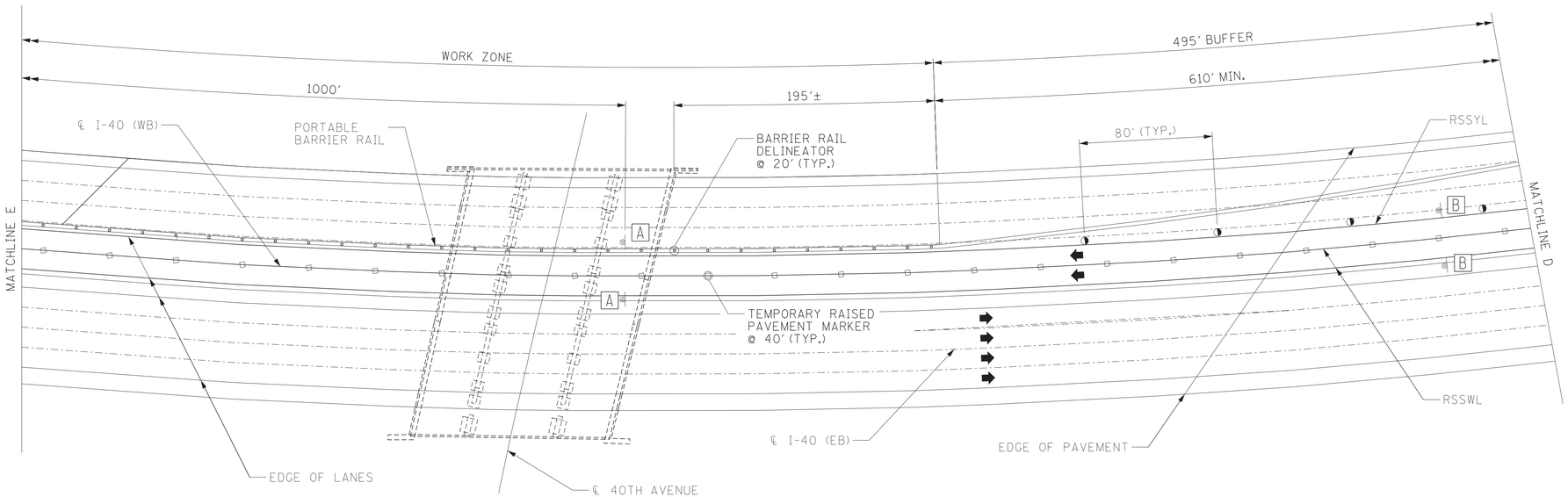
$$$$SYTIME$$$$$$$
$$$DGNSPEC$$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	11
PS&E	2026	19103-4110-04	11



INTERSTATE 40 TRAFFIC CONTROL PHASE II - PART 4

NOT TO SCALE



INTERSTATE 40 TRAFFIC CONTROL PHASE II - PART 5

NOT TO SCALE

TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSWL REMOVABLE SINGLE SOLID WHITE LINE
- RSSYL REMOVABLE SINGLE SOLID YELLOW LINE
- TEMPORARY ATTENUATOR
- WORKSPACE



W1-4BR
(48"X48")
A

N

46TH AVE EXIT CLOSED
¼ MILES AHEAD
FOLLOW DETOUR ROUTE

SPECIAL 3
(312"X120")
B

SEALED BY

BENJAMIN EVAN GRAVES
LICENSED PROFESSIONAL ENGINEER
COMMISSION
STATE OF TENNESSEE

03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

$$$$SYTIME$$$$$$$
$$ $$DGNSPEC$$ $$ $$ $

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	12
PS&E	2026	19103-4110-04	12

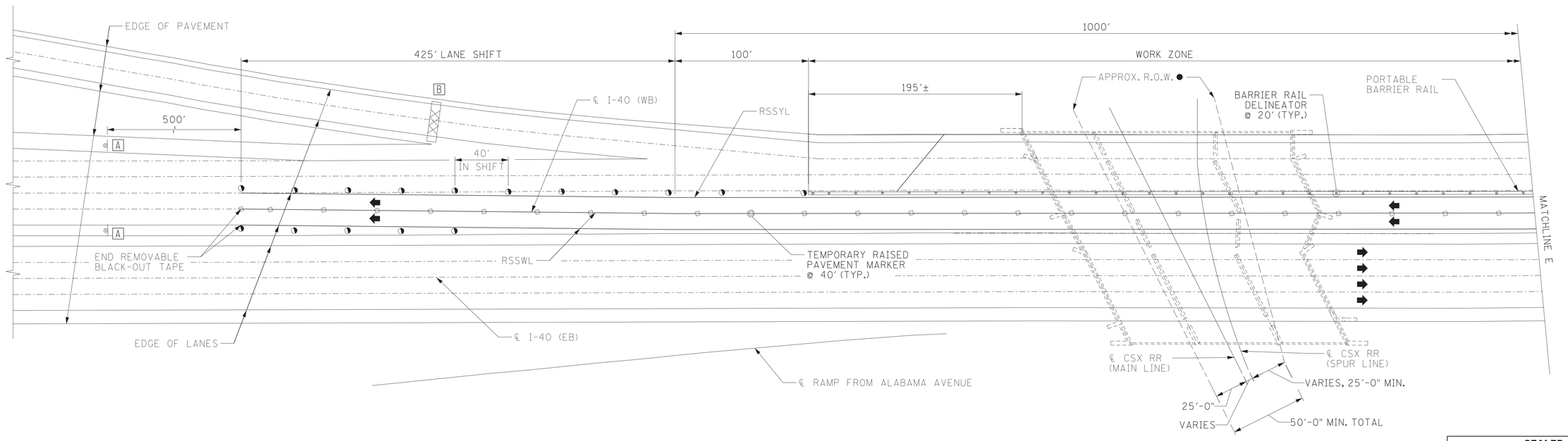
END
ROAD WORK
G20-2
(48"X24")
A

RII-2
(48"X30")
ROAD
CLOSED

TYPE III BARRICADE ROAD CLOSURE
B

TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSWL REMOVABLE SINGLE SOLID WHITE LINE
- RSSYL REMOVABLE SINGLE SOLID YELLOW LINE
- WORKSPACE



INTERSTATE 40 TRAFFIC CONTROL PHASE II - PART 6

NOT TO SCALE

● SURVEY NOT PROVIDED ON THIS PROJECT. R.O.W. ESTIMATED FROM ADJACENT PARCELS VIA METROGIS.

SEALED BY

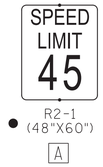
BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
B. Evan Graves
COMMISSION
STATE OF TENNESSEE
03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

$$$$SYTIME$$$$$$$
$$ $$DGNSPEC$$ $$$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	13
PS&E	2026	19103-4110-04	13



● R2-1 (48"X60")

A



W20-1 (48"X48")

B



W20-5L (48"X48")

C



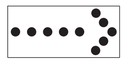
W20-5L (48"X48")

D



W4-2L (48"X48")

E



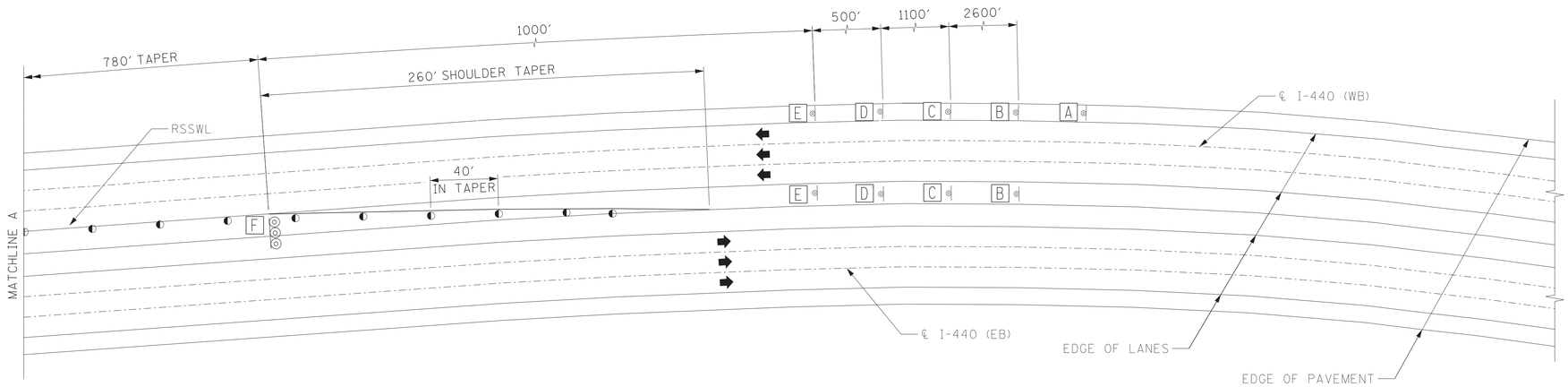
TYPE "C" ARROW BOARD (96" X 48") SEE STD. DWG. T-WZ-FAB1

F

● NOTE: ERECTION OF SPEED REDUCTION SIGNS WILL ONLY BE PERMITTED UPON WRITTEN REQUEST BY THE CONTRACTOR AND WRITTEN APPROVAL BY THE STATE TRAFFIC ENGINEER.

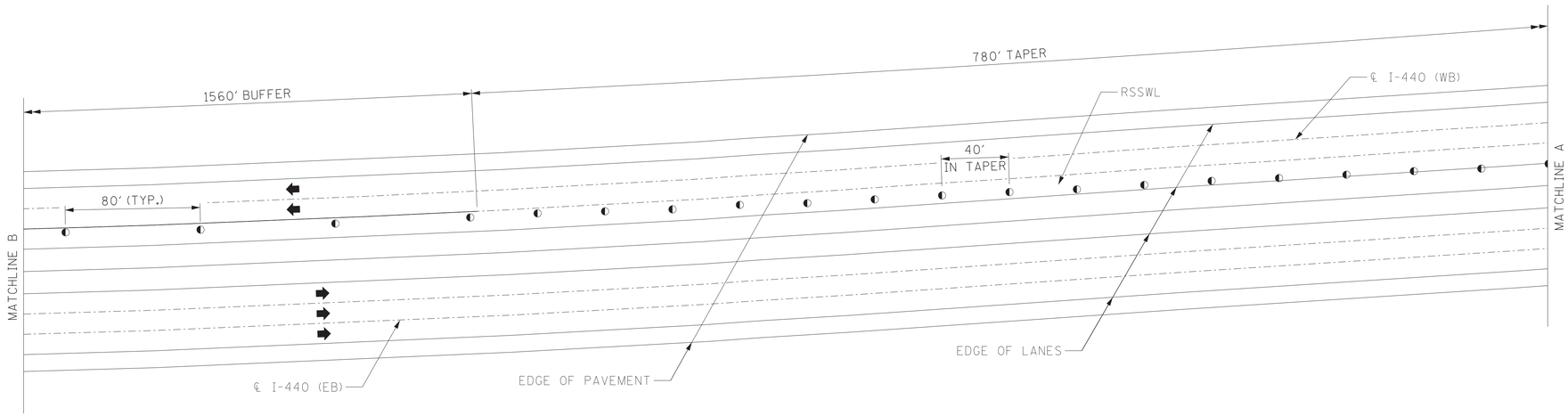
TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSWL REMOVABLE SINGLE SOLID WHITE LINE
- FLASHING ARROW BOARD (TYPE C)



INTERSTATE 440 TO INTERSTATE 40 TRAFFIC CONTROL PHASES I & II - PART 1

NOT TO SCALE



INTERSTATE 440 TO INTERSTATE 40 TRAFFIC CONTROL PHASES I & II - PART 2

NOT TO SCALE



SEALED BY



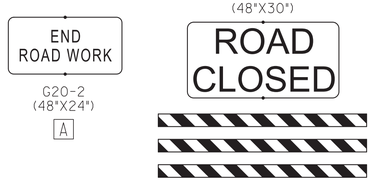
03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

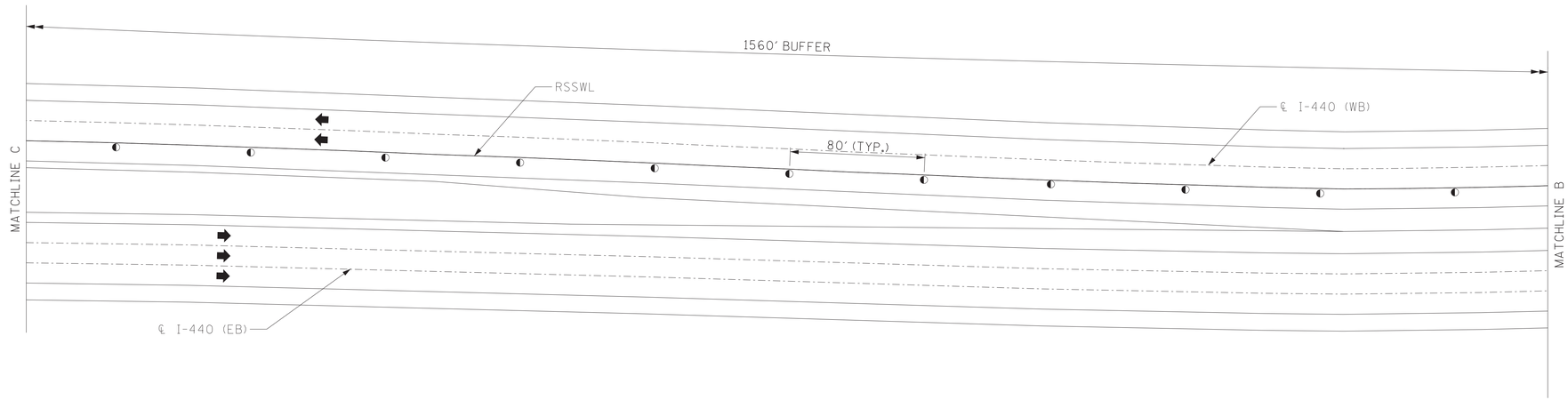
$$$$$SYTIME$$$$$$
$$$DGNSPEC$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	14
PS&E	2026	19103-4110-04	14



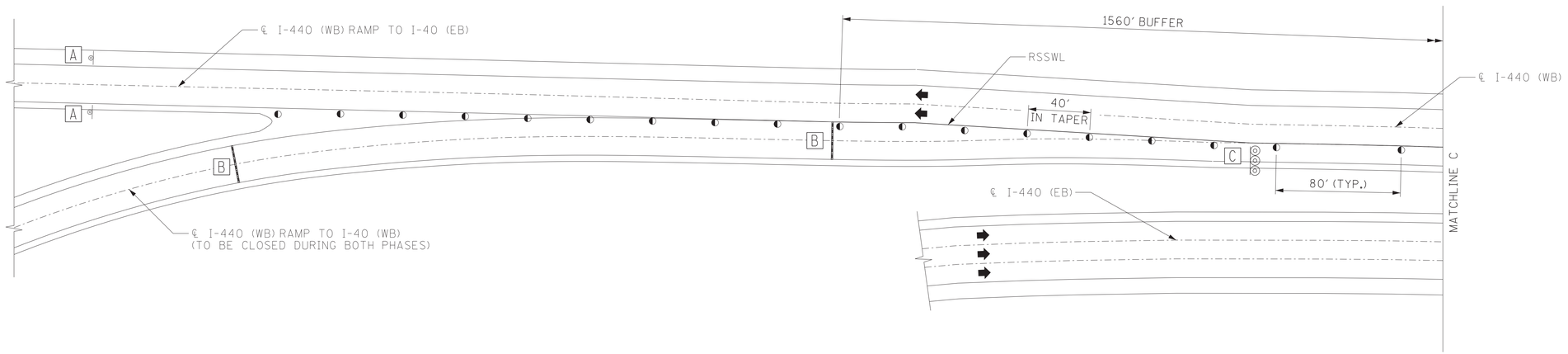
TRAFFIC CONTROL LEGEND

- FLEXIBLE DRUMS (CHANNELIZING)
- SIGN
- RSSWL REMOVABLE SINGLE SOLID WHITE LINE
- FLASHING ARROW BOARD (TYPE C)
- TYPE III BARRICADE



INTERSTATE 440 TO INTERSTATE 40 TRAFFIC CONTROL PHASES I & II - PART 3

NOT TO SCALE



INTERSTATE 440 TO INTERSTATE 40 TRAFFIC CONTROL PHASES I & II - PART 4

NOT TO SCALE

N

SEALED BY



03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLANS

$$$$$SYTIME$$$$$$
$$$DGNSPEC$$$$$$

RII-2
(48"X30")

ROAD CLOSED

TYPE III BARRICADE ROAD CLOSURE

A

END DETOUR

M4-8A
(24"X18")

B

46TH AVE EXIT CLOSED
¼ MILES AHEAD
FOLLOW DETOUR ROUTE

SPECIAL 3
(312"X120")

C

46TH AVE EXIT CLOSED
½ MILES AHEAD
FOLLOW DETOUR ROUTE

SPECIAL 4
(312"X120")

D

46TH AVE
EXIT CLOSED

SPECIAL 5
(60"X30")

DETOUR

M4-8
(30"X15")

M6-3
(30"X21")

E

DETOUR
M4-8
(30"X15")
TO
M4-5
(36"X18")
46TH AVE
SPECIAL 6
(60"X30")

M6-3
(30"X21")

F

DETOUR
M4-8
(24"X12")
TO
M4-5
(24"X12")
46TH AVE
SPECIAL 6
(60"X30")

M6-3
(21"X15")

G

DETOUR
M4-8
(24"X12")
TO
M4-5
(24"X12")
46TH AVE
SPECIAL 6
(60"X30")

M6-1L
(21"X15")

H

DETOUR
M4-8
(30"X15")
TO
M4-5
(36"X18")
46TH AVE
SPECIAL 6
(60"X30")

M6-2R
(30"X21")

J

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	15
PS&E	2026	19103-4110-04	15



INTERSTATE 40 WEST TO 46TH AVE OFF RAMP DETOUR

(TO BE PERFORMED ALONG WITH I-40 PHASE II TRAFFIC CONTROL)
NOT TO SCALE

SEALED BY

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
STATE OF TENNESSEE

03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC
CONTROL
PLANS

$$$$SYTIME$$$$$$
$$$DGNSPEC$$$$$$

TYPE	YEAR	PROJECT NO.	SHEET NO.
L&G	2026	19103-4110-04	16
PS&E	2026	19103-4110-04	16

CONSTRUCTION WORK ZONE & TRAFFIC CONTROL NOTES

1. ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.

2. IF THE CONTRACTOR MOVES OFF THE PROJECT, HE SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE ENGINEER. COSTS OF REMOVAL, COVERING, AND REINSTALLING SIGNS SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT ALL COSTS SHALL BE INCLUDED IN THE ORIGINAL UNIT PRICE BID FOR ITEM NO 712-06, SIGNS (CONSTRUCTION) PER SQUARE FOOT.

3. A LONG TERM BUT SPORADIC USE WARNING SIGN, SUCH AS A FLAGGER SIGN, MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.

4. TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING.

5. USE OF BARRICADES, PORTABLE BARRIER RAILS, VERTICAL PANELS, AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT. THESE DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN THIRTY (30) FEET OF THE EDGE OF THE TRAVELED WAY BEFORE OR AFTER USE UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADTS LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL INCREASE TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADTS OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. THESE DEVICES SHALL BE REMOVED FROM THE CONSTRUCTION WORK ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEERS APPROVAL TO USE THEM.

6. THE CONTRACTOR SHALL NOT BE PERMITTED TO PARK ANY VEHICLES OR CONSTRUCTION EQUIPMENT DURING PERIODS OF INACTIVITY, WITHIN THIRTY (30) FEET OF THE EDGE OF PAVEMENT WHEN THE LANE IS OPEN TO TRAFFIC UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES FOR ROADWAYS WITH CURRENT ADTS LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADTS OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO PARK WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE FOR ROADWAYS WITH CURRENT ADTS LESS THAN 1500 AND DESIGN SPEED OF LESS THAN 60 MPH. THIS DISTANCE SHALL BE INCREASED TO FORTY-FIVE (45) FEET FOR ROADWAYS WITH CURRENT ADTS OF 1500 OR GREATER AND DESIGN SPEED OF 60 MPH OR GREATER OR ON THE OUTSIDE OF A HORIZONTAL CURVE. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS REQUIRED SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEERS APPROVAL TO USE THEM.

7. ALL DETOUR AND CONSTRUCTION SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

8. T.D.O.T. CONSTRUCTION OFFICE SHALL NOTIFY THE OVERWEIGHT AND PERMITS OFFICE OF LANE WIDTH RESTRICTIONS DURING CONSTRUCTION PRIOR TO ALLOWING THE CONTRACTOR TO INSTALL TRAFFIC CONTROL. PERMIT VEHICLES WILL NOT BE ALLOWED UNTIL CONSTRUCTION IS COMPLETE AND FULL LANE WIDTHS HAVE BEEN RESTORED.

ADDITIONAL TRAFFIC CONTROL NOTES

ADVANCED WARNING SIGNS TO BE PLACED PRIOR TO CONSTRUCTION AND REMAIN IN PLACE UNTIL THE COMPLETION OF THIS PROJECT.

THE TRAFFIC CONTROL PLAN DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF INSTALLING TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE CURRENT EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

IF ADDITIONAL SIGNS ARE DEEMED NECESSARY BY THE ENGINEER, THEY SHALL BE FURNISHED AND INSTALLED AT THE UNIT PRICE BID, ITEM NO. 712-06 SIGNS (CONSTRUCTION) S.F.

MISCELLANEOUS NOTES

1. NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE BUSINESSES ALONG THE PROPOSED CONSTRUCTION AREA.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR LOSS OF EXISTING SIGNS DURING CONSTRUCTION. EXISTING SIGNS SHALL BE REMOVED AND REPLACED AS NECESSARY.

SPECIAL NOTES

1. TRAFFIC CONTROL PLAN - SEE SHEETS 5 THROUGH 16 AND STD. DWG. NOS. T-WZ-10, T-WZ-12, AND T-WZ-16.

TRAFFIC CONTROL SIGN QUANTITIES

TYPE	DESCRIPTION	SIZE	EACH	S.F.
G20-2	END ROAD WORK	48"X24"	6	48
M1-1	INTERSTATE 40	36"X36"	8	72
M3-4	WEST - SUPPLEMENTAL	36"X18"	8	36
M4-5	TO - SUPPLEMENTAL	24"X12"	4	8
M4-5	TO - SUPPLEMENTAL	36"X18"	2	9
M4-8	DETOUR	24"X12"	4	8
M4-8	DETOUR	30"X15"	3	10
M4-8A	END DETOUR	24"X18"	1	3
M6-1L	DIRECTIONAL ARROW - LEFT	21"X15"	2	5
M6-2R	DIRECTIONAL ARROW - 45 DEGREES RT	30"X21"	1	5
M6-3	DIRECTIONAL ARROW - STRAIGHT	21"X15"	2	5
M6-3	DIRECTIONAL ARROW - STRAIGHT	30"X21"	2	9
R2-1	SPEED LIMIT 45	48"X60"	2	40
R4-9	STAY IN LANE	48"X60"	2	40
R11-2	ROAD CLOSED	48"X30"	4	40
SP-3	46TH AVE EXIT CLOSED 1/4 MILES AHEAD FOLLOW DETOUR ROUTE	312"X120"	1	260
SP-4	46TH AVE EXIT CLOSED 1/2 MILES AHEAD FOLLOW DETOUR ROUTE	312"X120"	1	260
SP-5	46TH AVE EXIT CLOSED	60"X30"	1	13
SP-6	46TH AVE	60"X30"	6	75
W1-4BL	2 LANE SHIFT - LEFT	48"X48"	2	32
W1-4BR	2 LANE SHIFT - RIGHT	48"X48"	2	32
W4-2L	LANE CLOSED MERGE RIGHT - SYMBOL	48"X48"	4	64
W4-2R	LANE CLOSED MERGE LEFT - SYMBOL	48"X48"	2	32
W20-1	ROAD WORK 1 MILE	48"X48"	2	32
W20-1	ROAD WORK AHEAD	48"X48"	2	32
W20-5L	LEFT LANE CLOSED 1/2 MILE	48"X48"	4	64
W20-5L	LEFT LANE CLOSED 1500 FT	48"X48"	4	64
W20-5R	RIGHT LANE CLOSED 1/2 MILE	48"X48"	2	32
W20-5R	RIGHT LANE CLOSED 1500 FT	48"X48"	2	32
TOTAL				1362

TRAFFIC CONTROL QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	712-01	TRAFFIC CONTROL	LS	1
	712-02.12	PORTABLE BARRIER RAIL, REDUCED DEFLECTION (MASH TL-3)	L.F.	1800
(1)	712-02.60	TEMPORARY WORK ZONE CRASH CUSHION (MASH TL-3)	EACH	1
	712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	200
	712-04.50	PORTABLE BARRIER RAIL DELINEATOR	EACH	59
	712-06	SIGNS (CONSTRUCTION)	S.F.	1362
	712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	72
	712-08.03	ARROW BOARD (TYPE C)	EACH	3
(2)	712-08.10	MOBILE MESSAGE SIGN UNIT W/ATTENUATOR	HOUR	1008
	712-08.12	QUEUE PROTECTION TRUCK	DAY	60
	712-09.02	REMOVABLE PAVEMENT MARKING (8" BARRIER LINE)	L.F.	11915
	712-09.08	REMOVABLE PAVEMENT MARKING (6" LINE)	L.F.	11635
	712-09.30	REMOVABLE BLACK-OUT TAPE (6")	L.F.	11635
	713-16.01	CHANGEABLE MESSAGE SIGN UNIT	EACH	20
	716-01.11	RAISED PVMT MARKERS (BI-DIRECTIONAL) (1 COLOR LENS)	EACH	167
	716-01.14	RAISED PAVEMENT MARKER REMOVAL	EACH	43
	716-01.23	SNOW PLOWABLE RAISED PAVEMENT MARKERS (BI-DIR) (2 COLOR)	EACH	43
	716-12.02	ENHANCED FLATLINE THERMO PVMT MRKNG (6" LINE)	L.M.	0.7
	717-01	MOBILIZATION	LS	1

(1) 712-02.60 THIS ITEM SHALL BE A PORTABLE ENERGY ABSORBING TERMINAL MEETING THE REQUIREMENTS OF AASHTO MASH FOR TEST LEVEL 3. THE PAY ITEM WILL INCLUDE FURNISHING AND INSTALLING ALL COMPONENTS AS LISTED ON THE MANUFACTURERS BILL OF MATERIALS.

(2) 712-08.10 VALUE BASED ON ASSUMED 6 TRUCKS USED FOR SEVEN (7) 24-HOUR DAYS. SEE SPECIAL PROVISION SP712PTQ FOR MORE DETAIL.

SEALED BY

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
B. Evan Graves
COMMISSION NO. 121756
STATE OF TENNESSEE
03/30/2026

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL QUANTITIES AND NOTES

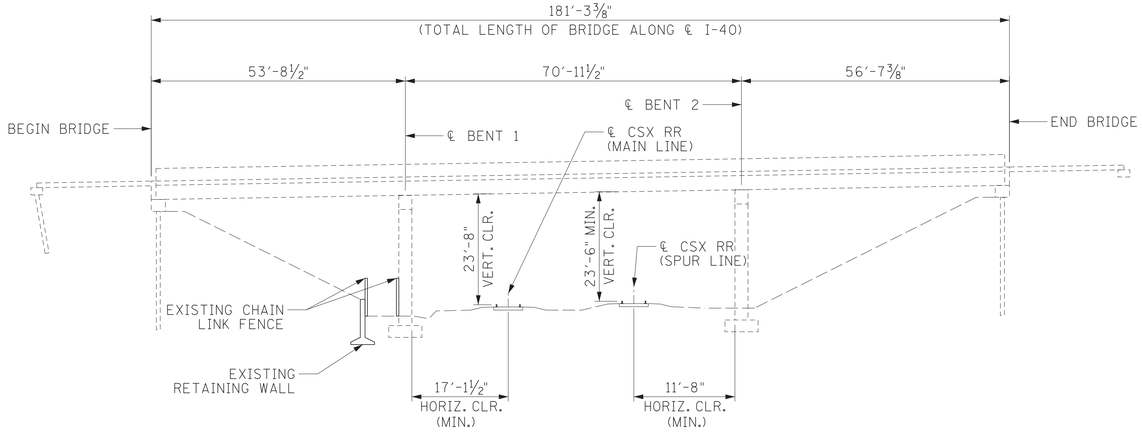
$$$$$SYTIME$$$$$$
$$$$DGNSPEC$$$$$$$

CONST. NO. 19103-4110-04

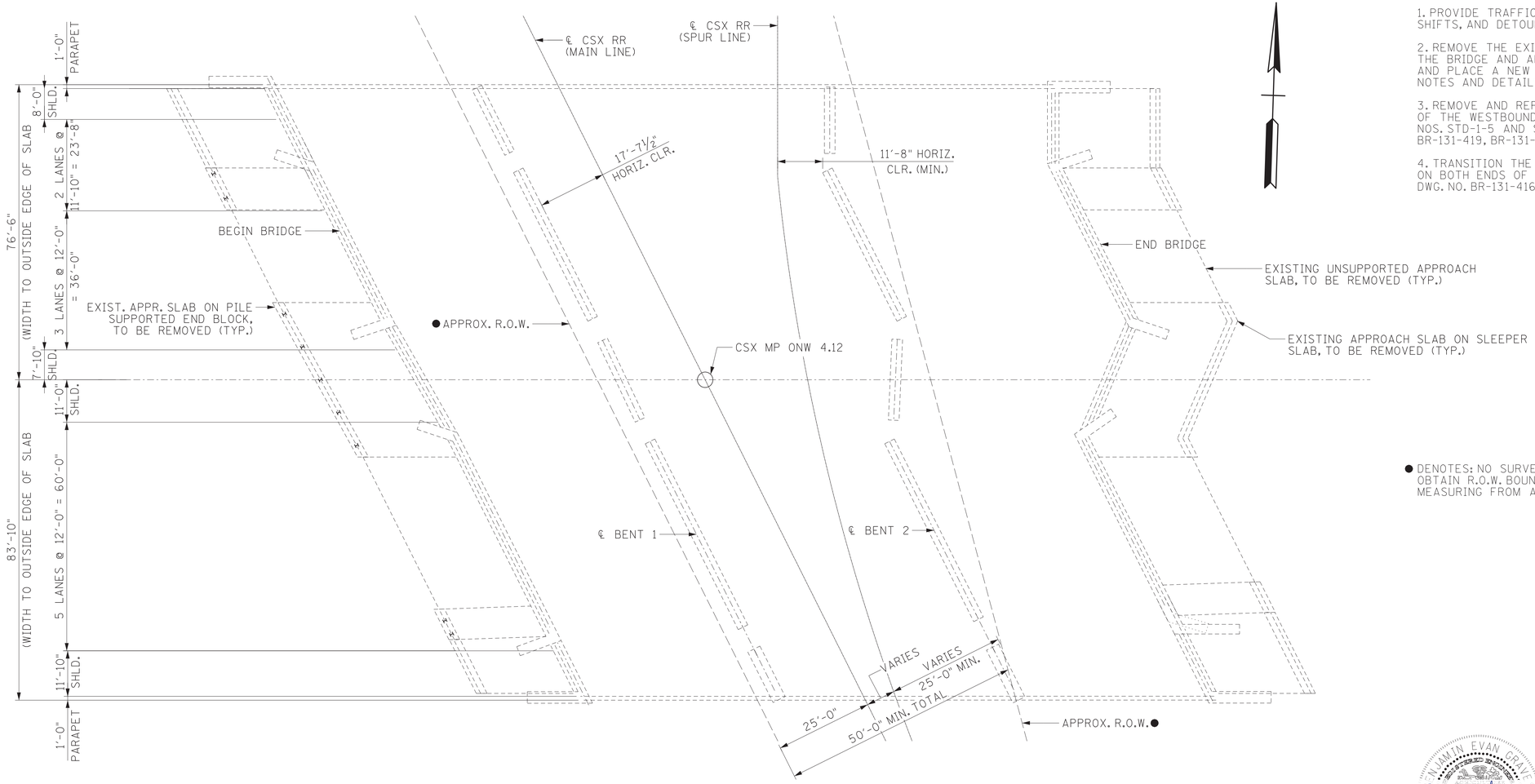
PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION



PLAN

● SURVEY NOT PROVIDED ON THIS PROJECT. R.O.W. ESTIMATED FROM ADJACENT PARCELS VIA METROGIS.

N

SCOPE OF WORK

1. PROVIDE TRAFFIC CONTROL UTILIZING WEEKEND LANE CLOSURES, LANE SHIFTS, AND DETOUR, SEE DETAILS ON SHEETS 5-16.

2. REMOVE THE EXISTING ASPHALT OVERLAY ON THE WESTBOUND LANES OF THE BRIDGE AND APPROACHES, HYDRO-DEMO THE EXISTING BRIDGE DECK 1½", AND PLACE A NEW 1½" POLYMER MODIFIED CONCRETE (PMC) OVERLAY. FOR NOTES AND DETAILS, SEE DWG. NOS. BR-131-411 AND BR-131-412.

3. REMOVE AND REPLACE THE EXISTING APPROACH SLABS AT BOTH ENDS OF THE WESTBOUND LANES. FOR NOTES AND DETAILS, SEE STD. DWG. NOS. STD-1-5 AND STD-10-2 AND DWG. NOS. BR-131-418, BR-131-418A, BR-131-419, BR-131-420, AND BR-131-421.

4. TRANSITION THE APPROACH ASPHALT TO THE NEW BRIDGE PMC OVERLAY ON BOTH ENDS OF THE WESTBOUND LANES. FOR NOTES AND DETAILS, SEE DWG. NO. BR-131-416.

● DENOTES: NO SURVEY HAS BEEN PERFORMED TO OBTAIN R.O.W. BOUNDARIES. DIMENSIONS OBTAINED BY MEASURING FROM ADJACENT PARCELS.

13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE TO BE REPAIRED

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BR-131-410

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
COMMERCE
No. 117107
STATE OF TENNESSEE
03/30/2026

DESIGNED BY	Rawleigh S. Richardson Jr.	DATE	2/2/24
DRAWN BY	Rawleigh S. Richardson Jr.	DATE	2/2/24
SUPERVISED BY	Benjamin E. Graves	DATE	2/2/24
CHECKED BY	Lane M. Decker	DATE	2/2/24

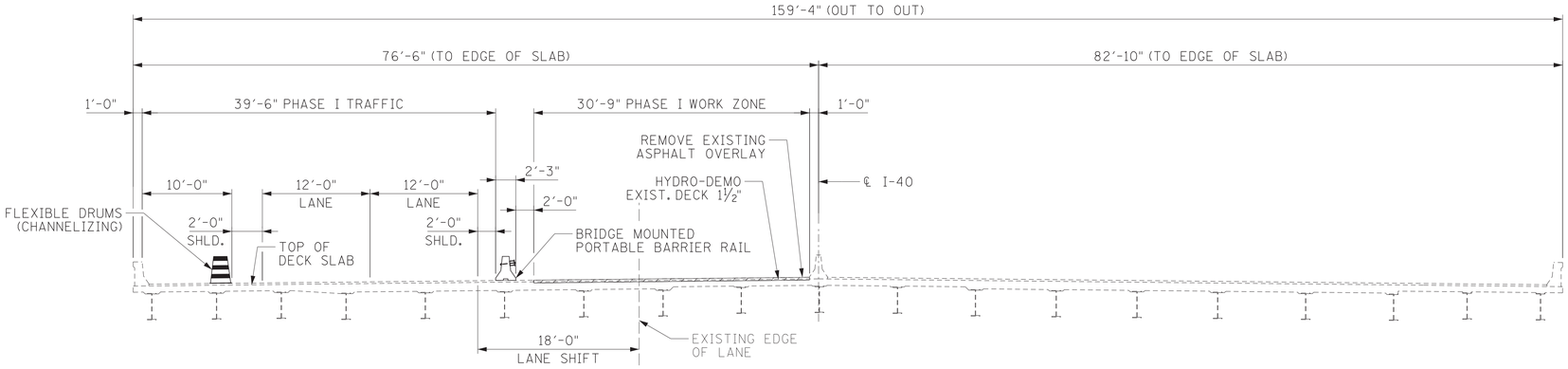
HDR

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

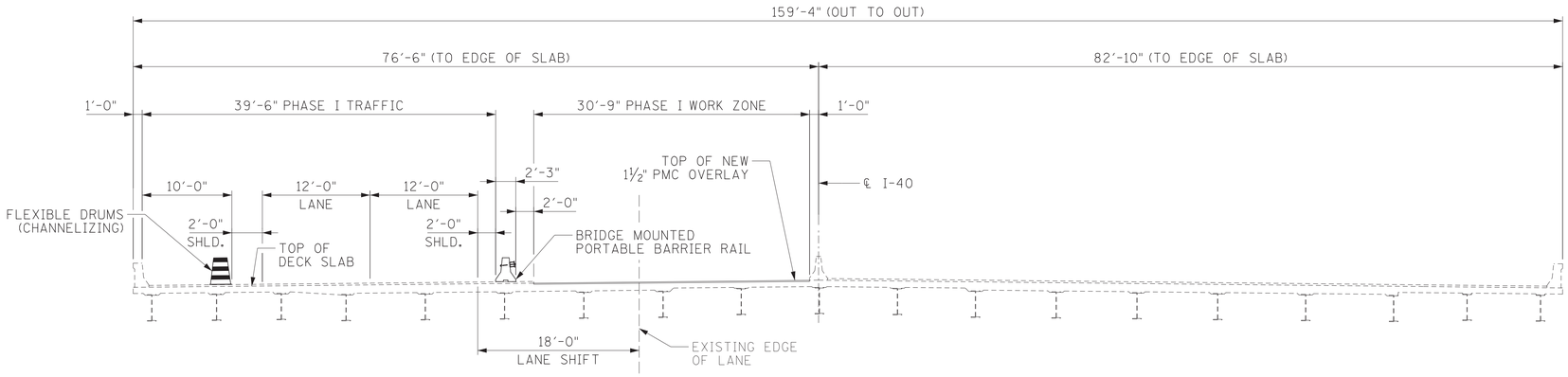
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



TYPICAL SECTION - PHASE I REMOVAL

(LOOKING FORWARD ON ROUTE)



TYPICAL SECTION - PHASE I CONSTRUCTION

(LOOKING FORWARD ON ROUTE)

13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PHASED CONSTRUCTION DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR ℄ 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 ℄ 13.76
FED. ID NOS. 19I00400039 ℄ 41
DAVIDSON COUNTY
2026

BR-131-411

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

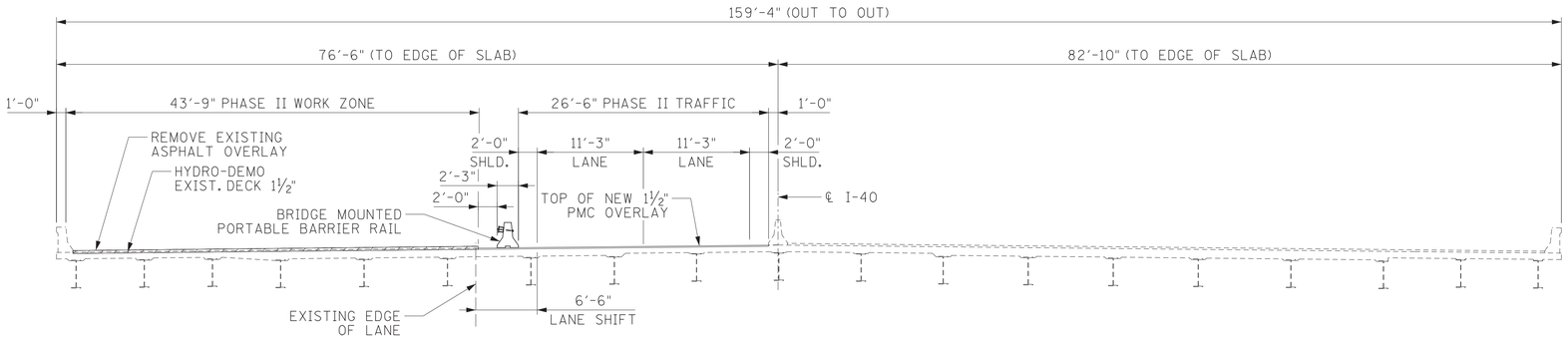
BENJAMIN EVAN GRAVES — REGISTERED ENGINEER — COMMISSION — STATE OF TENNESSEE
B. Evan Graves
03/30/2026

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

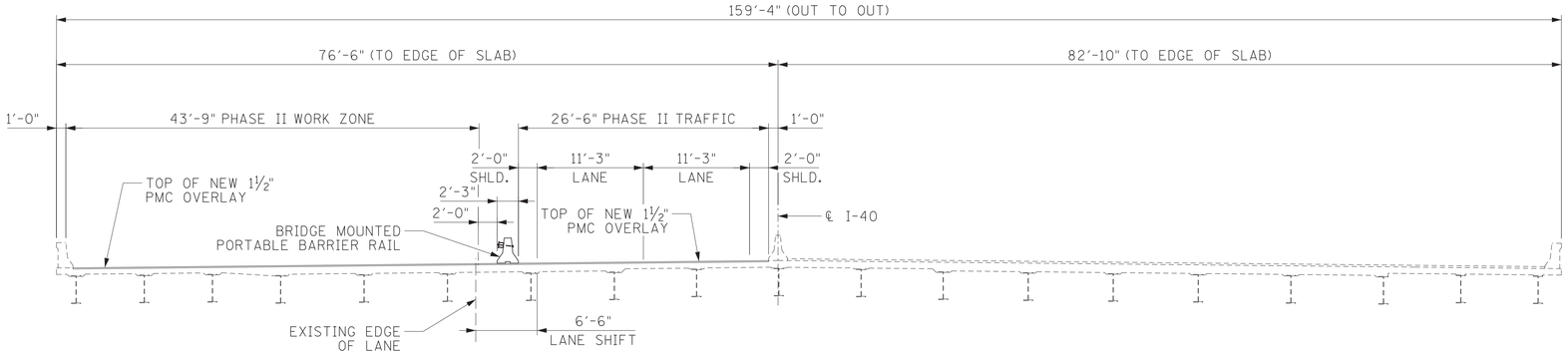
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



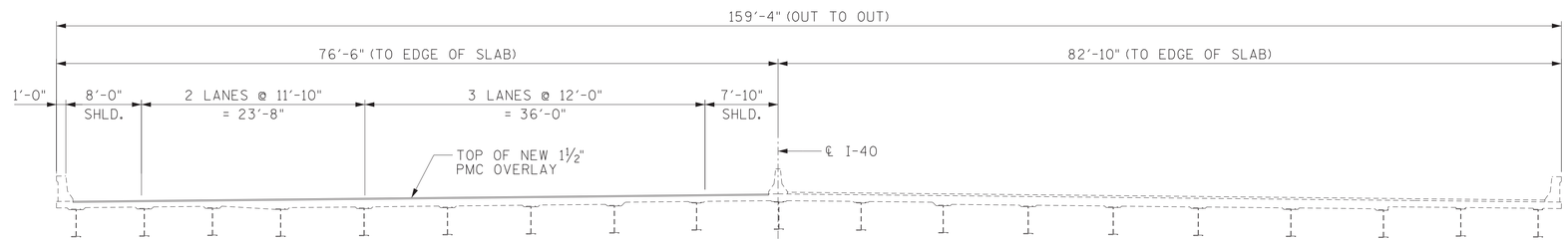
TYPICAL SECTION - PHASE II REMOVAL

(LOOKING FORWARD ON ROUTE)



TYPICAL SECTION - PHASE II CONSTRUCTION

(LOOKING FORWARD ON ROUTE)



TYPICAL SECTION - FINAL

(LOOKING FORWARD ON ROUTE)

13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PHASED CONSTRUCTION DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BR-131-412

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

HDR

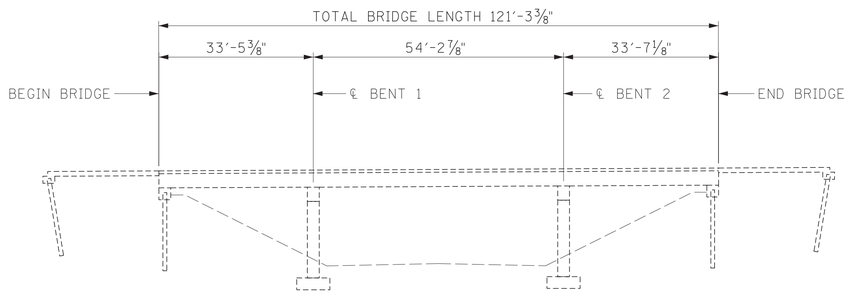
BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
COMMERCE
No. 117107
STATE OF TENNESSEE
03/30/2026

CONST. NO. 19103-4110-04

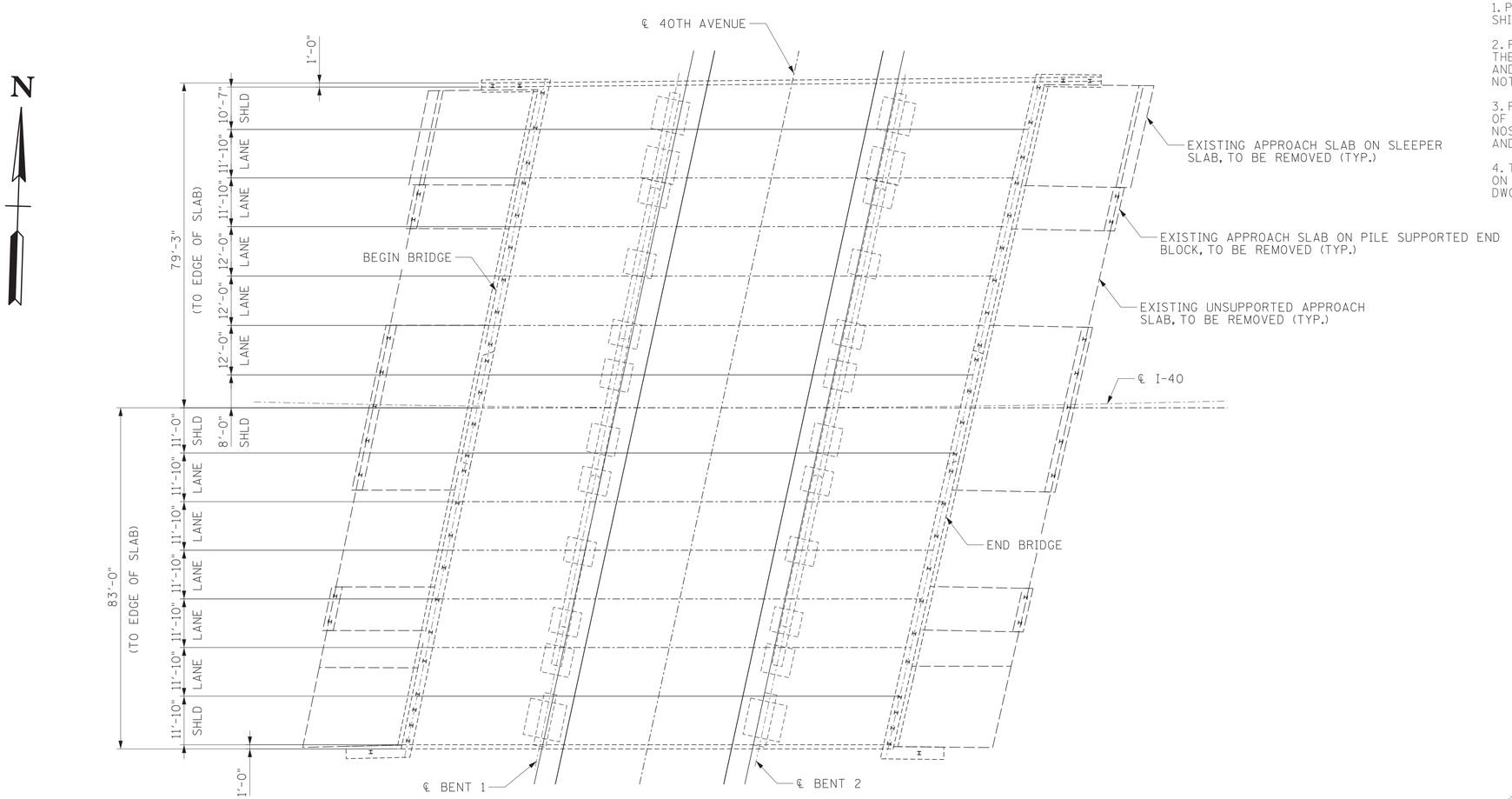
PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION



PLAN

SCOPE OF WORK

1. PROVIDE TRAFFIC CONTROL UTILIZING WEEKEND LANE CLOSURES, LANE SHIFTS, AND DETOUR, SEE DETAILS ON SHEETS 5-16.

2. REMOVE THE EXISTING ASPHALT OVERLAY ON THE WESTBOUND LANES OF THE BRIDGE AND APPROACHES, HYDRO-DEMO THE EXISTING BRIDGE DECK 1½", AND PLACE A NEW 1½" POLYMER MODIFIED CONCRETE (PMC) OVERLAY. FOR NOTES AND DETAILS, SEE DWG. NO. BR-131-423.

3. REMOVE AND REPLACE THE EXISTING APPROACH SLABS AT BOTH ENDS OF THE WESTBOUND LANES. FOR NOTES AND DETAILS, SEE STD. DWG. NOS. STD-1-5 AND STD-10-2 AND DWG. NOS. BR-131-422, BR-131-423, AND BR-131-424.

4. TRANSITION THE APPROACH ASPHALT TO THE NEW BRIDGE PMC OVERLAY ON BOTH ENDS OF THE WESTBOUND LANES. FOR NOTES AND DETAILS, SEE DWG. NO. BR-131-423.

13.76

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE TO BE REPAIRED

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
COMMERCE
No. 117107
STATE OF TENNESSEE
03/30/2026

DESIGNED BY	Rawleigh S. Richardson Jr.	DATE	2/2/24
DRAWN BY	Rawleigh S. Richardson Jr.	DATE	2/2/24
SUPERVISED BY	Benjamin E. Graves	DATE	2/2/24
CHECKED BY	Lane M. Decker	DATE	2/2/24

HDR

BR-131-413

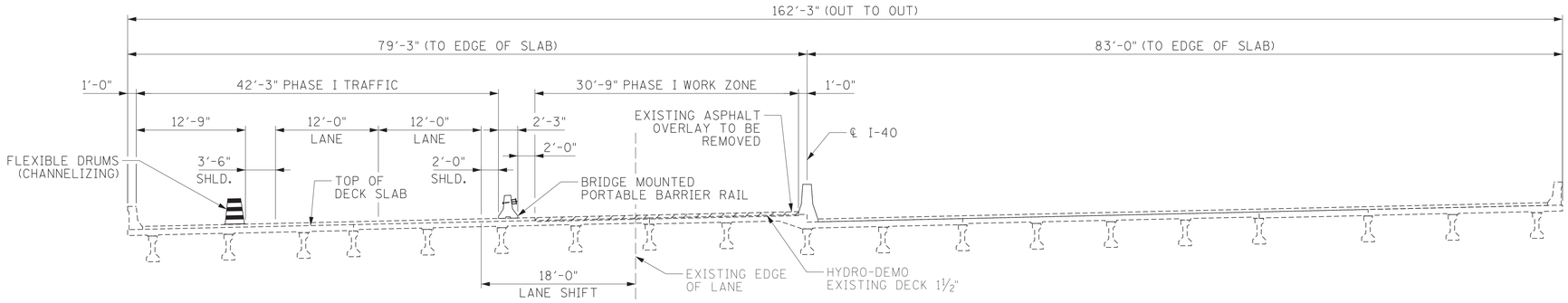
CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

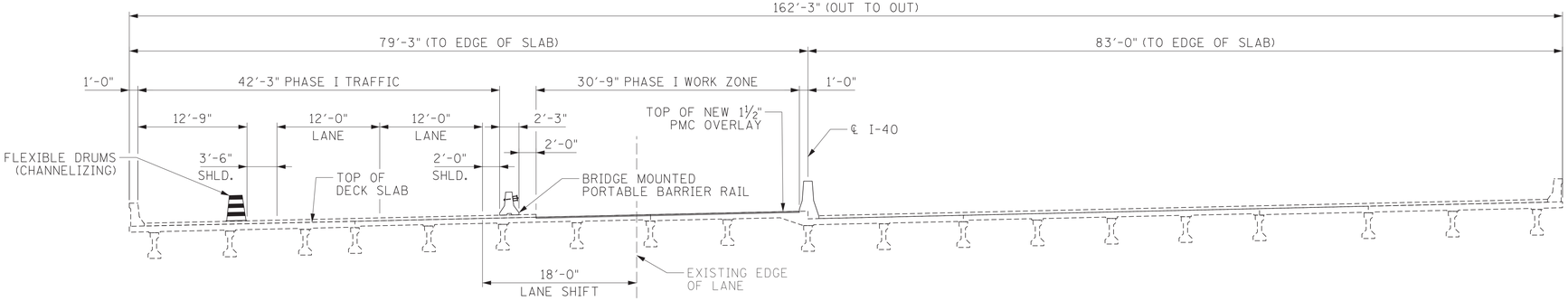
NO.	DATE	BY	BRIEF DESCRIPTION

OVERLAY AREA TO BE REMOVED



TYPICAL SECTION - PHASE I REMOVAL

(LOOKING FORWARD ON ROUTE)



TYPICAL SECTION - PHASE I CONSTRUCTION

(LOOKING FORWARD ON ROUTE)

13.76

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PHASED CONSTRUCTION DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
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DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
COMMERCE
No. 117107
STATE OF TENNESSEE
03/30/2026

BR-131-414

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
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SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

HDR

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

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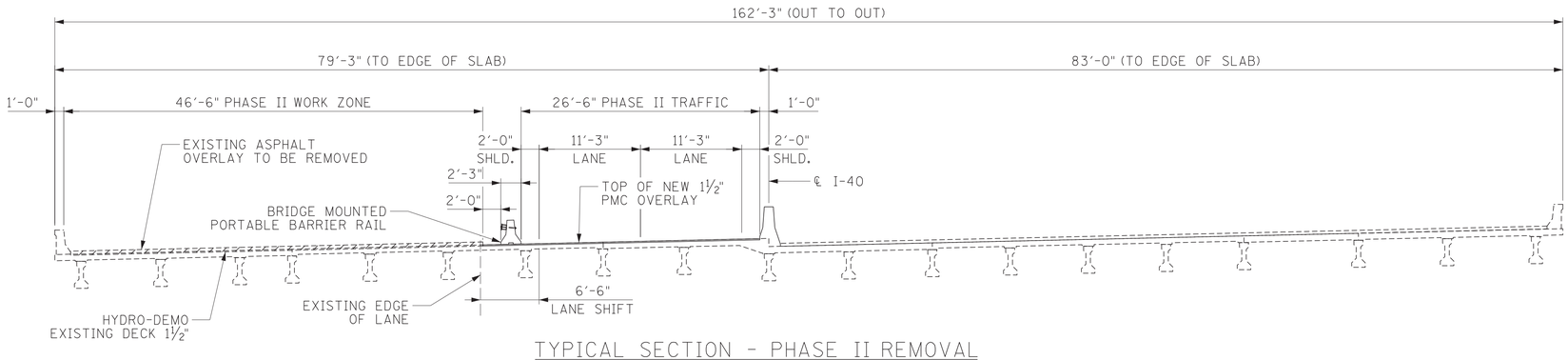
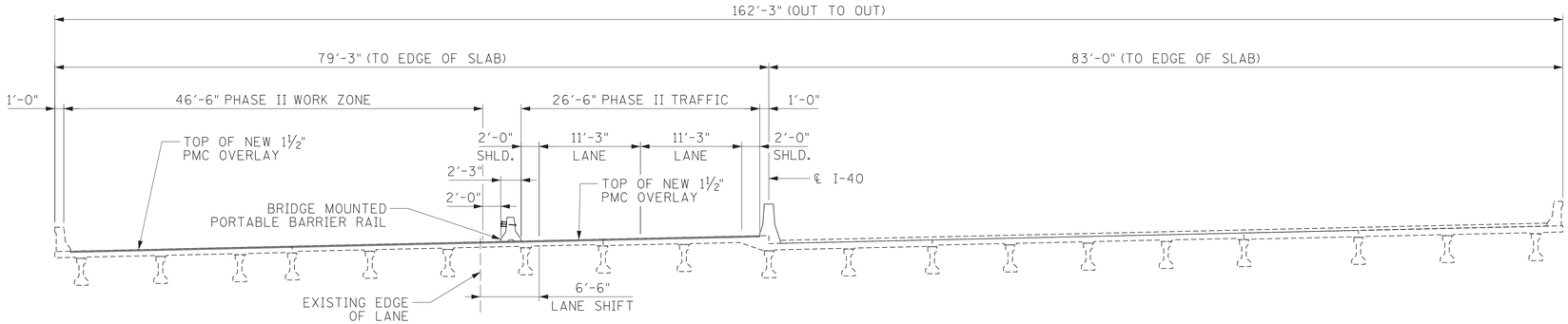


TYPICAL SECTION - PHASE II REMOVAL

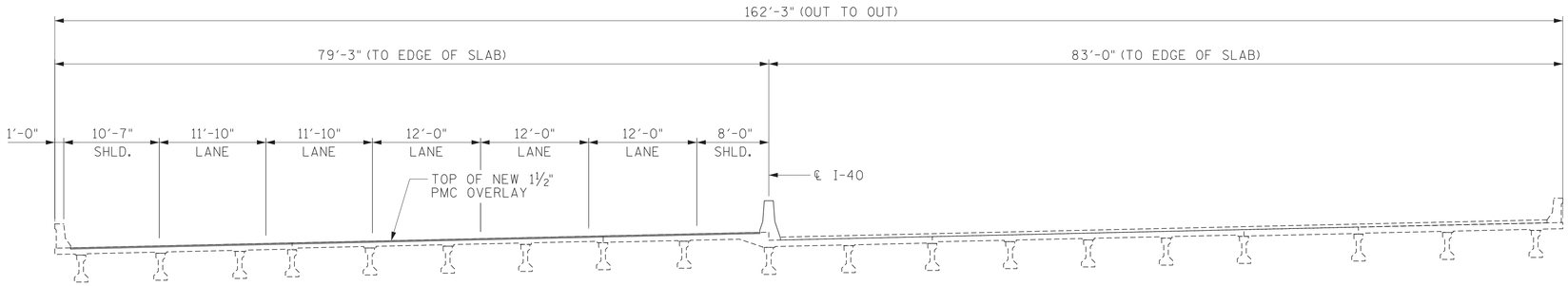
(LOOKING FORWARD ON ROUTE)

OVERLAY AREA TO BE REMOVED



TYPICAL SECTION - PHASE II CONSTRUCTION

(LOOKING FORWARD ON ROUTE)



TYPICAL SECTION - FINAL

(LOOKING FORWARD ON ROUTE)

13.76

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PHASED CONSTRUCTION DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
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2026

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
No. 117107
STATE OF TENNESSEE
03/30/2026

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
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HDR

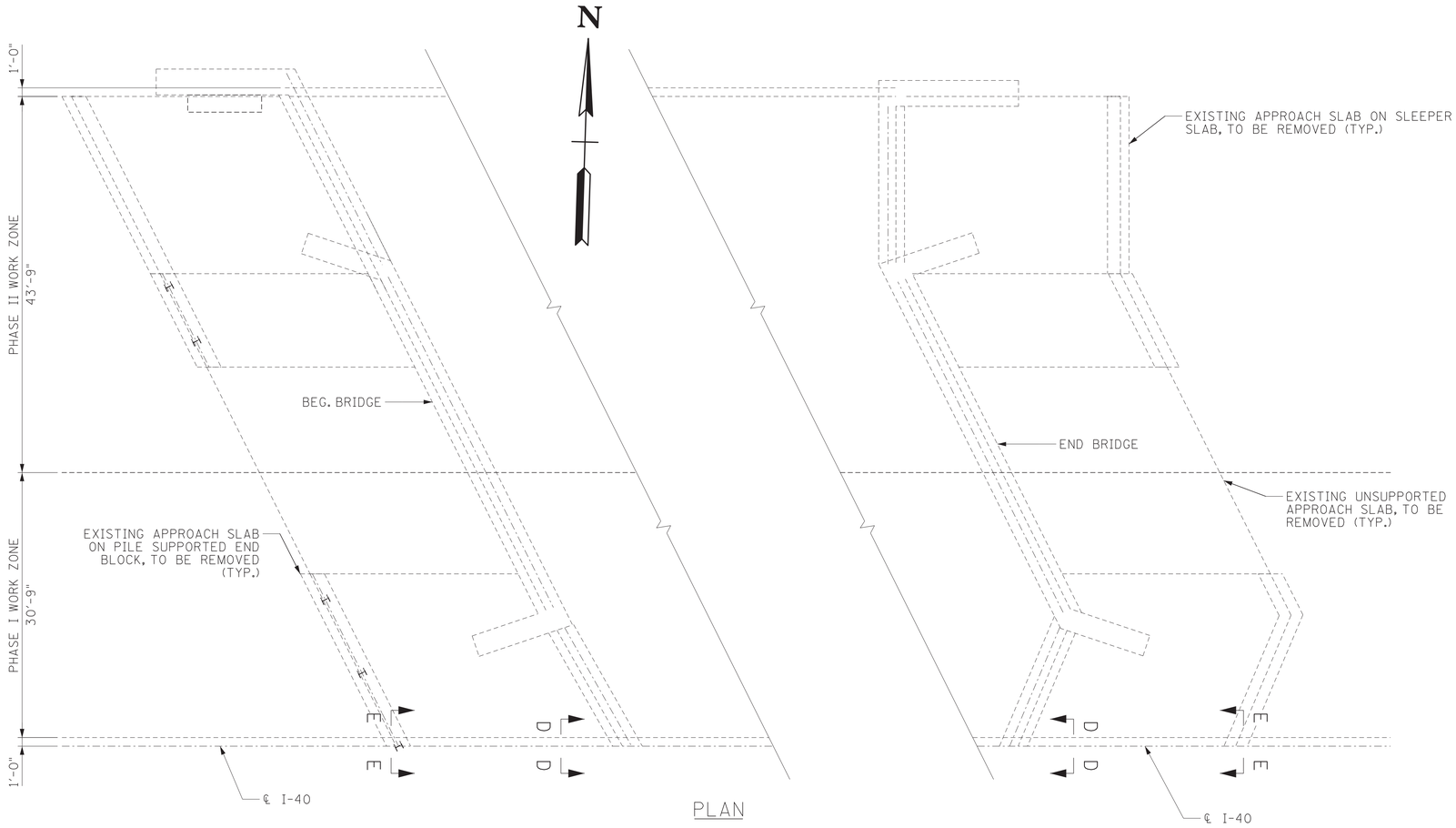
BR-131-415

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

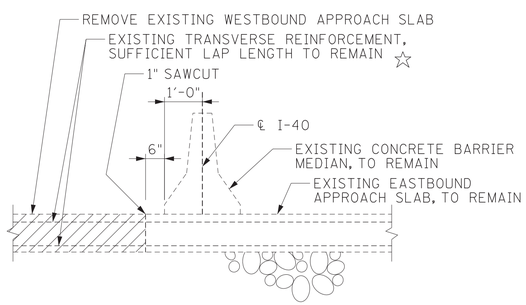
NOTES:

ALL COSTS OF ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO REMOVE THE EXISTING APPROACH SLAB, END BLOCK AND JOINT, PLACE NEW STRUCTURAL STEEL, WELD, AND PROVIDE NEW CONTINUOUS ELASTOMERIC BEARING PAD AND NEW JOINT SYSTEM AT BOTH APPROACHES OF THE WESTBOUND LANES AT BRIDGE NO. 19-I0040-13.64 SHALL BE INCLUDED UNDER ITEM NO. 604-10.44, EXPANSION JOINT REPAIRS, L.F.

FOR ADDITIONAL DETAILS OF APPROACH SLAB AND END BLOCK REPAIR SEE DWG. NO. BR-131-418A, BR-131-419, BR-131-420 AND BR-131-421.

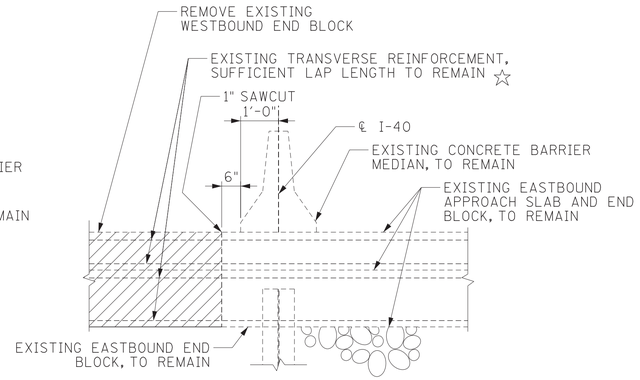
☞ DIMENSIONS SHOWN BASED ON 1984 AND 1998 WIDENING PLANS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

☆ 4'-9" MINIMUM LAP LENGTH TO BE PRESERVED FOR #8 BARS.



SECTION D-D (APPROACH SLAB DEMOLITION)

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)



SECTION E-E (END BLOCK DEMOLITION)

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)
(PILES OMITTED ON EAST APPROACH)

13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL REPAIR DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
COMMERCE
No. 117107
STATE OF TENNESSEE
03/30/2026

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

HDR

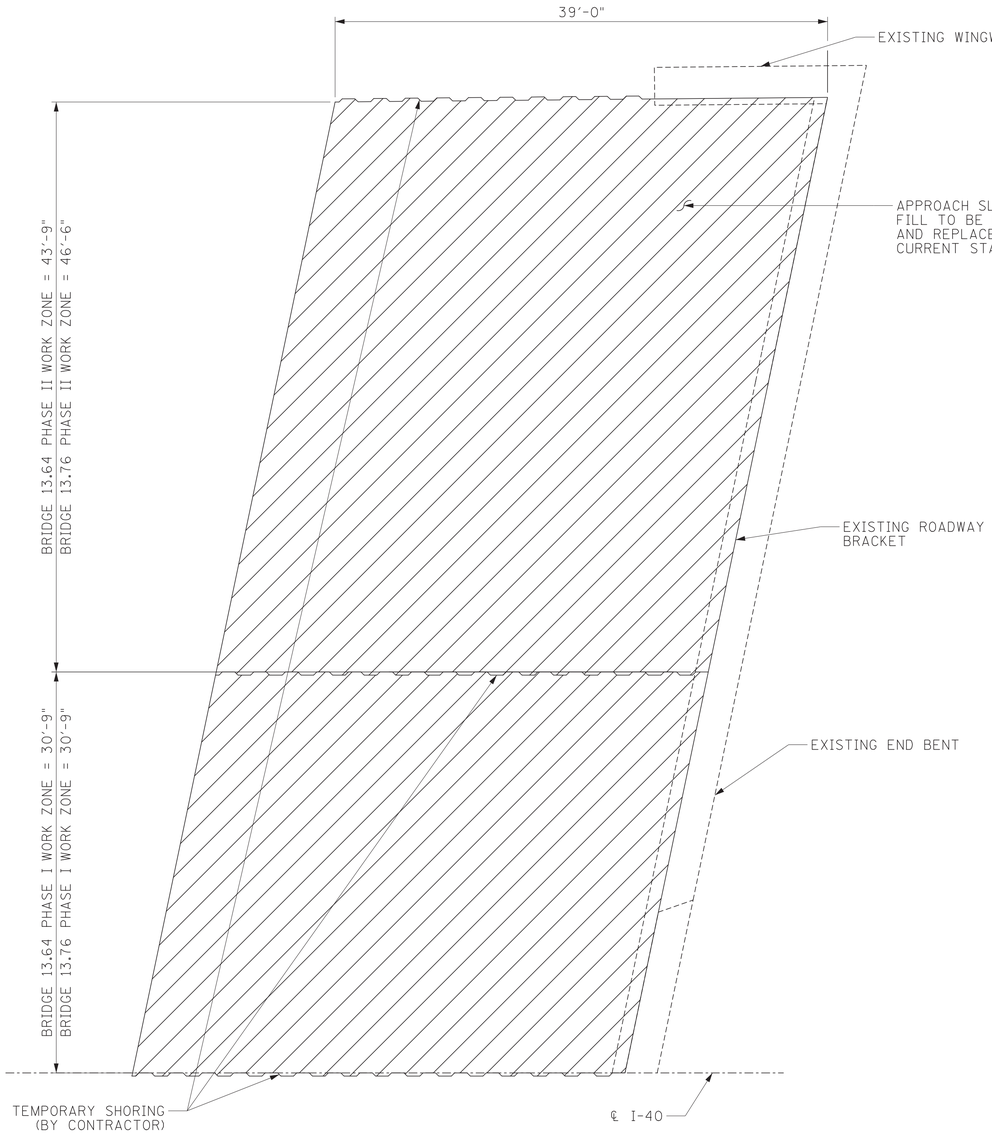
BR-131-418

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



EXCAVATION PLAN AT ABUTMENT (TYP.)

NOTES:

☞ THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS AND DESIGN CALCULATIONS TO T.D.O.T. ENGINEER REGARDING THE SIZE AND EMBEDMENT OF THE TEMPORARY SHORING PRIOR TO THE INSTALLATION OF THE SHORING. BY REVIEWING THE DRAWING AND DESIGN CALCULATIONS THE ENGINEER SHALL ASSUME NO LIABILITY UPON HIMSELF OR THE STATE OF TENNESSEE, NOR SHALL THIS RELIEVE THE CONTRACTOR FOR THE SUFFICIENCY OF THE SYSTEM. EXTREME CARE SHALL BE TAKEN BY CONTRACTORS DURING SHEET PILE DRIVING SO AS TO NOT INTERFERE WITH ADJACENT TRAFFIC.

☞ THE CONTRACTOR SHALL SHORE AROUND THE EXCAVATED WORK AREA. SHEET PILING IS SHOWN ON THESE PLANS FOR THAT SHORING. THE CONTRACTOR CAN CHOOSE AN ALTERNATIVE METHOD OF SHORING AND IF THE CONTRACTOR CHOOSES AN ALTERNATIVE MEANS OF SHORING, DETAILS SHALL BE SUBMITTED TO THE OFFICE OF INSPECTION AND REPAIR FOR REVIEW OF ANY SHORING SYSTEM USED BY CONTRACTOR. COST OF LABOR AND EQUIPMENT FOR EXCAVATION AND SHORING SHALL BE INCLUDED UNDER ITEM NO. 204-02.01, DRY EXCAVATION (BRIDGE NOS. 19-I0040-13.64 & 13.76), C.Y.

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

HDR

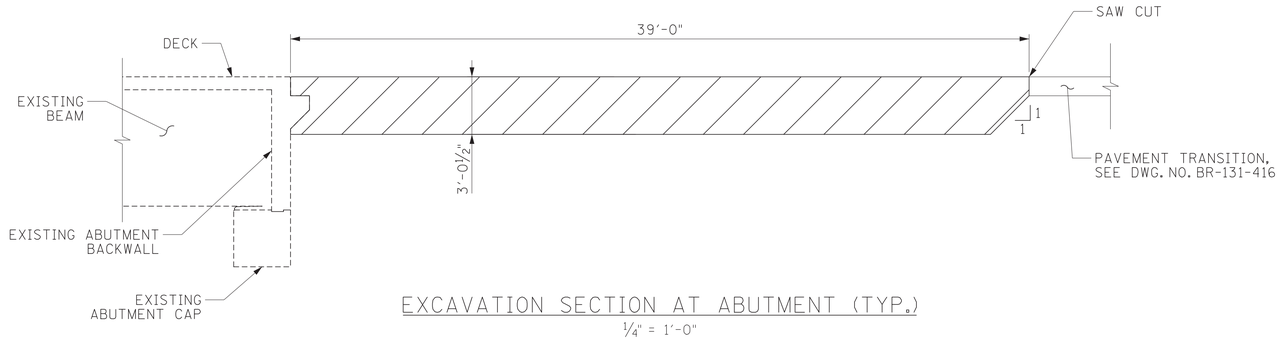
NOTES:

FOR ADDITIONAL DETAILS OF BRIDGE APPROACH TRANSITIONS, SEE DWG. NO. BR-131-416.

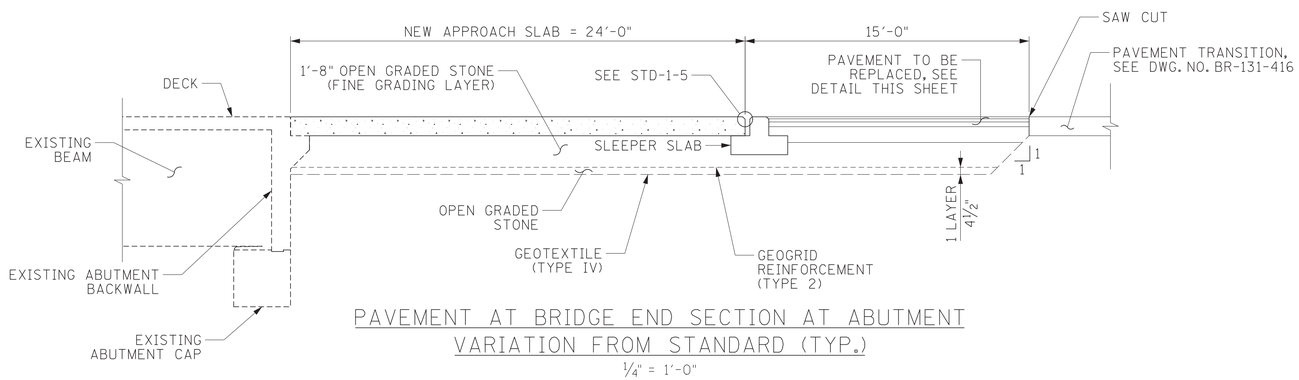
SEE REINFORCED CONCRETE PAVEMENT AT BRIDGE ENDS DETAIL ON STANDARD DRAWING NO. STD-1-5. ALSO SEE MISC. ABUTMENT & PAVEMENT AT BRIDGE ENDS DETAILS ON STANDARD DRAWING NOS. STD-10-1 & STD-10-2.

APPROACH PAVEMENT AT THE ABUTMENT BRIDGE ENDS WILL VARY FROM STD. DWG. STD-1-5 AS SHOWN ON THIS SHEET.

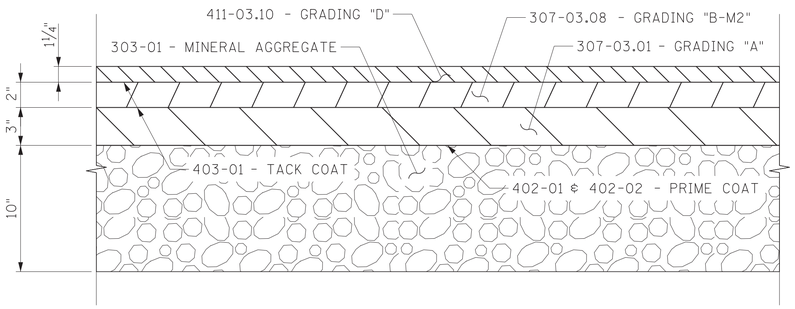
ALL COSTS OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO REMOVE AND DISPOSE OF THE EXISTING APPROACH SLABS AT BRIDGE NOS. 19-I0040-13.64 & 19-I0040-13.76 SHALL BE INCLUDED UNDER ITEM NO. 604-10.44, EXPANSION JOINT REPAIRS, LF.



EXCAVATION SECTION AT ABUTMENT (TYP.)
¼" = 1'-0"



PAVEMENT AT BRIDGE END SECTION AT ABUTMENT VARIATION FROM STANDARD (TYP.)
¼" = 1'-0"



PAVEMENT REPLACEMENT DETAIL - SECTION AT ABUTMENT
2" = 1'-0"

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
B. Evan Graves
STATE OF TENNESSEE
03/30/2026

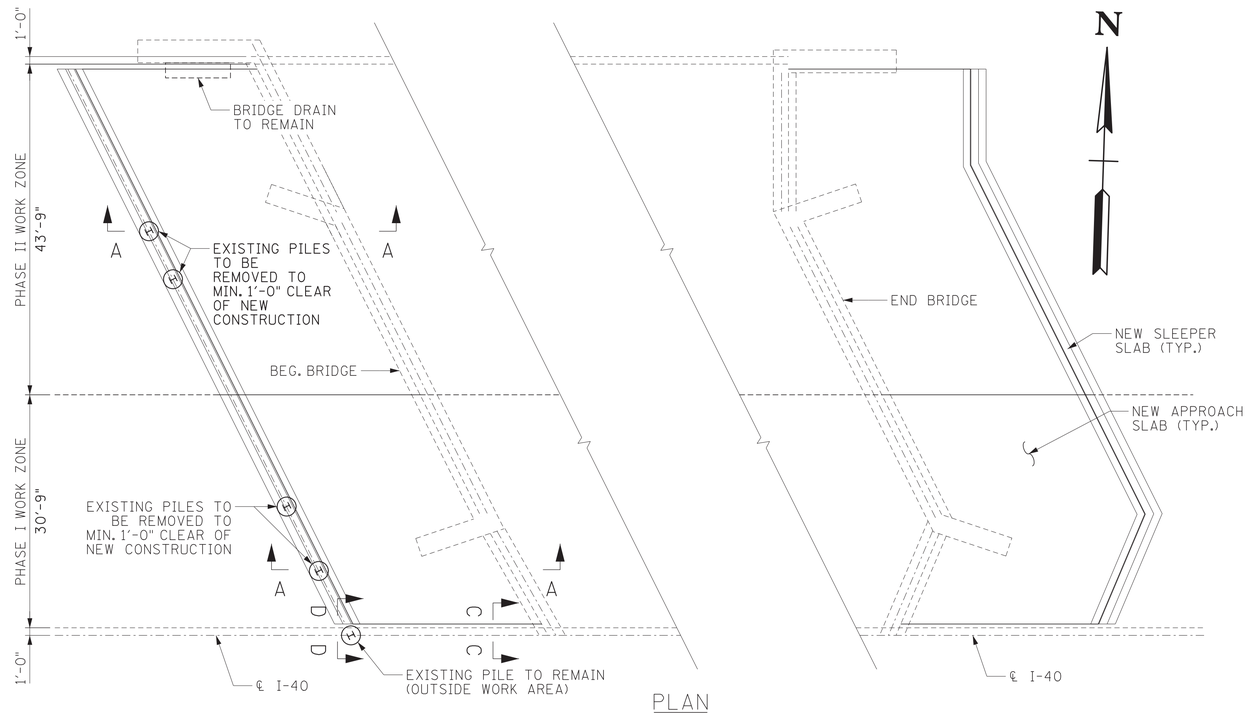
13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL REPAIR DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BR-131-418A



PLAN

NOTES:

ALL COSTS OF ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO REMOVE THE EXISTING APPROACH SLAB, END BLOCK AND JOINT, PLACE NEW STRUCTURAL STEEL, WELD, AND PROVIDE NEW CONTINUOUS ELASTOMERIC BEARING PAD AND NEW JOINT SYSTEM AT BOTH APPROACHES OF THE WESTBOUND LANES AT BRIDGE NO. 19-I0040-13.64 SHALL BE INCLUDED UNDER ITEM NO. 604-10.44, EXPANSION JOINT REPAIRS, L.F.

EXISTING PILES TO BE REMOVED TO SUFFICIENT DEPTH (MIN. 1'-0" CLR. OF NEW CONSTRUCTION) TO ALLOW FOR CONSTRUCTION OF NEW APPROACH SLABS AND SLEEPER SLABS.

CONCRETE FOR ALL EXPANSION JOINT REPAIR AREAS AND APPROACH SLAB REPAIRS TO BE HIGH EARLY STRENGTH CONCRETE WITH A 3000 PSI COMPRESSIVE STRENGTH BEFORE LOADING AND WITHIN 12 HOURS MAXIMUM.

COST OF REINFORCING STEEL FOR APPROACH SLAB SHALL BE PAID FOR UNDER ITEM NO. 604-10.18, REINFORCING STEEL (REPAIRS), L.B. FORMING AND PLACING CONCRETE IN THE NEW SLEEPER SLABS AND APPROACH SLABS SHALL BE PAID FOR UNDER ITEM NO. 604-10.42, CONCRETE REPAIRS, C.F.

FOR ADDITIONAL NOTES AND DETAILS OF PAVEMENT AT BRIDGE ENDS EXPANSION JOINT, SEE STANDARD DRAWING NO. STD-1-5.

PROVIDE JOINT OPENING OF 2" AT MID-TEMPERATURE OF 60 DEGREES F, WITH A TOTAL MOVEMENT REQUIRED OF 1" (ONE INCH), ACTUAL SETTING AS PER TEMPERATURE CHART ON EXPANSION JOINT SHOP DWGS.

CONST. NO. 19103-4110-04

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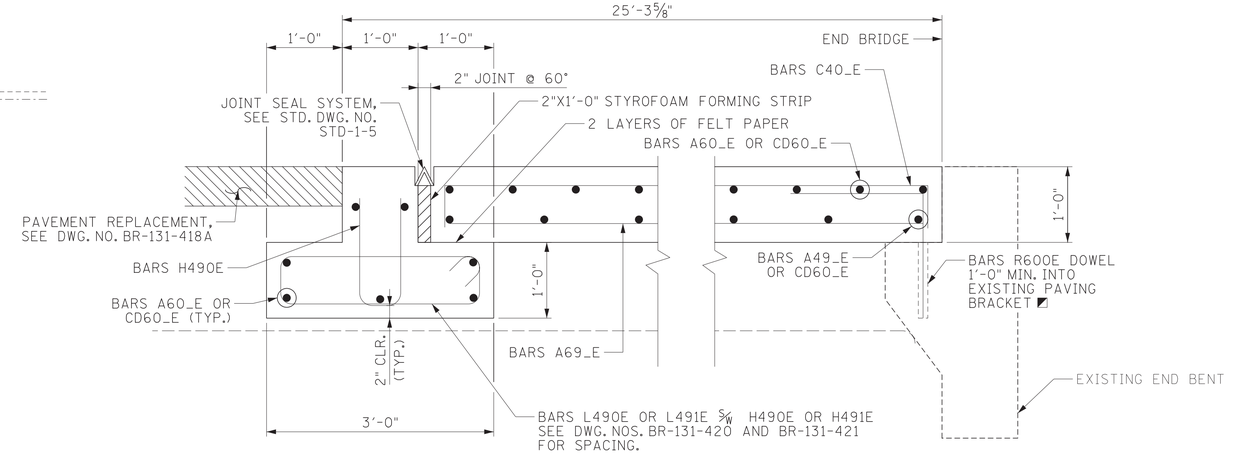
☞ DIMENSIONS SHOWN BASED ON 1984 AND 1998 WIDENING PLANS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FOR ADDITIONAL DETAILS OF APPROACH SLAB AND SLEEPER SLAB REPAIR SEE DWG. NOS. BR-131-420 AND BR-131-421.

◩ GROUTED BARS IN DRILLED HOLES: VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.



SECTION A-A

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)
(EXISTING PILES OMITTED ON EAST APPROACH)

END BLOCK REINFORCEMENT (EAST APPROACH)							
BARS	SIZE	NO. REQ'D.	BENDING DIMENSIONS				LENGTH
			A	B	C	D	
● A602E	6	14					5'-0"
A605E	6	7					18'-0"
A606E	6	7					27'-4"
A607E	6	7					18'-3"
A608E	6	7					14'-8"
H490E	4	76	6"	1'-5"			3'-4"
H492E	4	2	6⅛"	1'-5"			3'-4"
H493E	4	1	6⅝"	1'-5"			3'-5"
H494E	4	2	6¾"	1'-5"			3'-5"
CD601E	6	7	5'-0"	5'-0"	4'-5⅝"		10'-0"
CD602E	6	7	5'-0"	5'-0"	3'-3"		10'-0"
L490E	4	76	2'-8"	8"			7'-5"
L492E	4	2	2'-8⅝"	8"			7'-6"
L493E	4	1	2'-11¼"	8"			7'-8"
L494E	4	2	2'-11¾"	8"			7'-9"

NOTES:

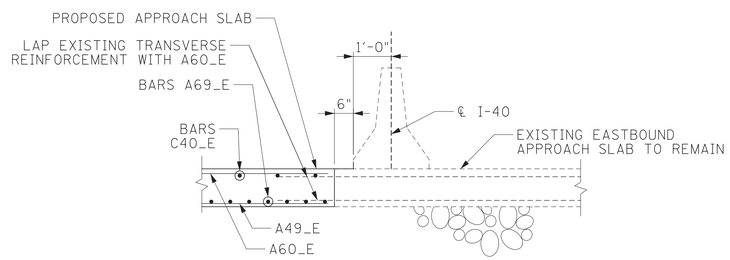
ALL BAR DIMENSIONS ARE OUT-TO-OUT.

ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO FABRICATION.

BARS ENDING IN "E" TO BE EPOXY COATED.

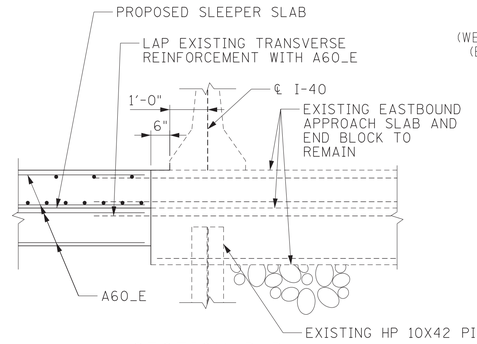
● THREADED FOR MECHANICAL COUPLER.

BILL OF STEEL							
END BLOCK REINFORCEMENT (WEST APPROACH)							
BARS	SIZE	NO. REQ'D.	BENDING DIMENSIONS				LENGTH
			A	B	C	D	
● A602E	6	14					5'-0"
A603E	6	7					33'-5"
A604E	6	7					47'-8"
H490E	4	79	6"	1'-5"			3'-4"
H491E	4	2	6¾"	1'-5"			3'-5"
L490E	4	79	2'-8"	8"			7'-5"
L491E	4	2	2'-11¾"	8"			8'-0"



SECTION C-C

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)



SECTION D-D

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)
(EXISTING PILES OMITTED ON EAST APPROACH)

13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL REPAIR DETAILS

INTERSTATE 40 (WB LANES) OVER
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DAVIDSON COUNTY
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BENJAMIN EVAN GRAVES
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HDR

BR-131-419

CONST. NO. 19103-4110-04

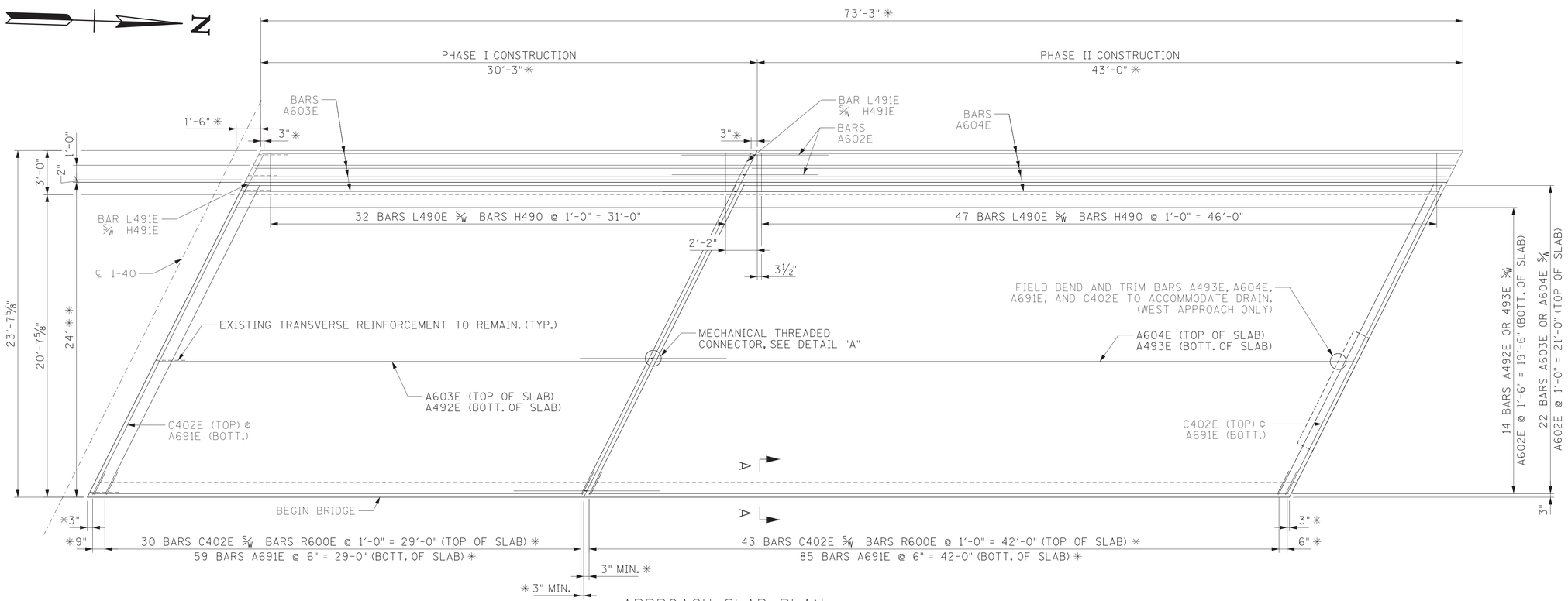
PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

* MEASURED PERPENDICULAR TO ℄ OF I-40.

** MEASURED PARALLEL TO ℄ OF I-40.



APPROACH SLAB PLAN

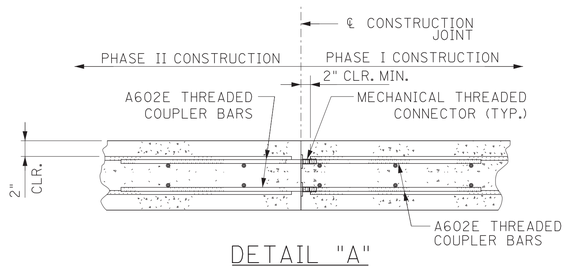
(WEST APPROACH SHOWN)

NOTE:

DIMENSIONS SHOWN BASED ON 1984 AND 1998 WIDENING PLANS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

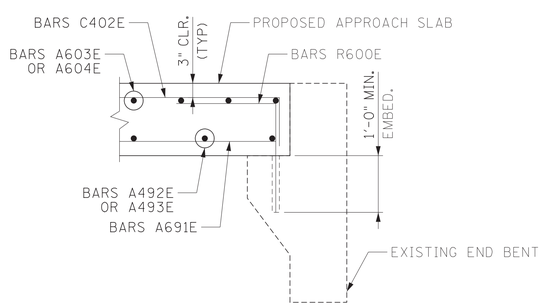
CONSTRUCT WEST APPROACH TO ACCOMMODATE EXISTING BRIDGE DRAIN.

COST OF REINFORCING STEEL FOR APPROACH SLABS TO BE PAID FOR UNDER ITEM NO. 604-10.18 REINFORCING STEEL (REPAIRS), L.B. FORMING AND PLACING CONCRETE IN THE APPROACH SLABS SHALL BE PAID FOR UNDER ITEM NO. 604-10.42, CONCRETE REPAIRS, C.F.



DETAIL "A"

NOTE: THE COST OF MECHANICAL THREADED CONNECTORS AND THE COST OF THREADING THE COUPLER BARS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM NO. 604-10.18



SECTION A-A

BILL OF STEEL

APPROACH SLAB REINFORCEMENT (WEST APPROACH)

BARS	SIZE	NO. REQ'D.	BENDING DIMENSIONS A	B	C	D	LENGTH
A492E	4	14					33'-5"
A493E	4	14					47'-8"
● A602E	6	72					5'-0"
A603E	6	22					33'-5"
A604E	6	22					47'-8"
A691E	6	146					23'-8"
C402E	4	75	23'-8"	6"			24'-8"
◥ R600E	6	75	2'-0"	1'-9"			3'-9"

NOTES:

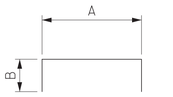
ALL BAR DIMENSIONS ARE OUT-TO-OUT.

ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO FABRICATION.

BARS ENDING IN "E" TO BE EPOXY COATED.

● THREADED FOR MECHANICAL COUPLER.

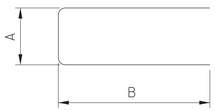
◥ GROUTED BARS IN DRILLED HOLES: VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.



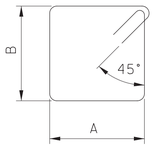
BARS C402E



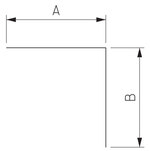
BARS A---E



BARS H49-E



BARS L49-E



BARS R600E

13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL REPAIR DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR ℄ 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 ℄ 13.76
FED. ID NOS. 19I00400039 ℄ 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES
NOTARY PUBLIC
DAVIDSON COUNTY
TENNESSEE
STATE OF TENNESSEE

03/30/2026

BR-131-420

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

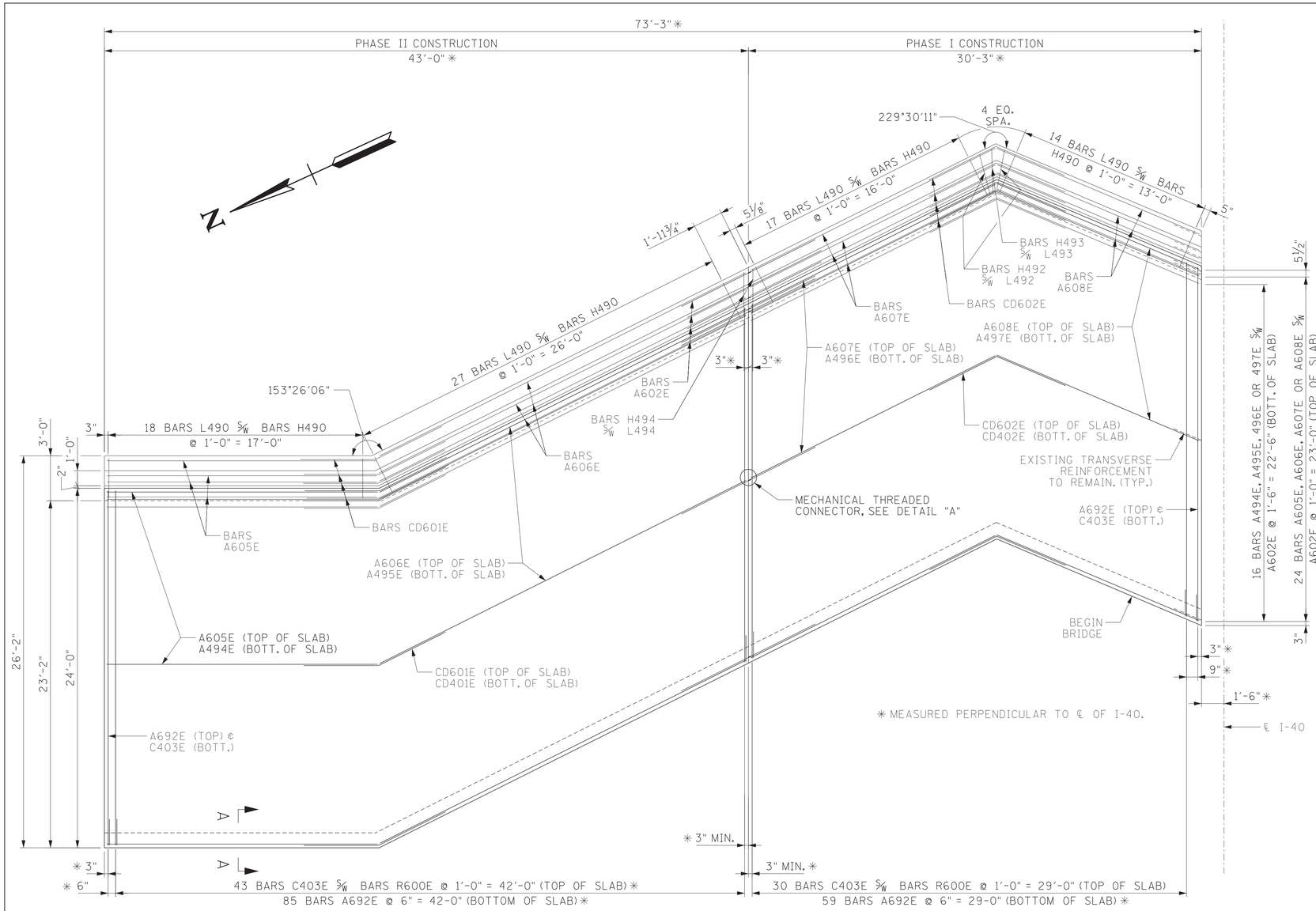
HDR

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



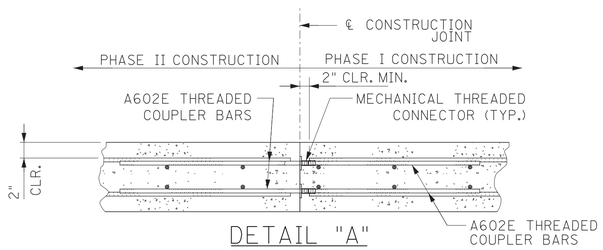
∗ MEASURED PERPENDICULAR TO ℄ OF I-40.

APPROACH SLAB PLAN
(EAST APPROACH SHOWN)

NOTE:

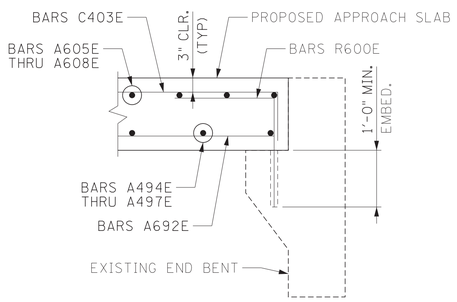
DIMENSIONS SHOWN BASED ON 1984 AND 1998 WIDENING PLANS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

COST OF REINFORCING STEEL FOR APPROACH SLABS TO BE PAID FOR UNDER ITEM NO. 604-10.18 REINFORCING STEEL (REPAIRS), L.B. FORMING AND PLACING CONCRETE IN THE APPROACH SLABS SHALL BE PAID FOR UNDER ITEM NO. 604-10.42, CONCRETE REPAIRS, C.F.



DETAIL "A"

NOTE: THE COST OF MECHANICAL THREADED CONNECTORS AND THE COST OF THREADING THE COUPLER BARS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM NO. 604-10.18



SECTION A-A

BILL OF STEEL

APPROACH SLAB REINFORCEMENT (EAST APPROACH)

BARS	SIZE	NO. REQ'D.	BENDING DIMENSIONS A	B	C	D	LENGTH
A494E	4	16					18'-1"
A495E	4	16					27'-4"
A496E	4	16					18'-3"
A497E	4	16					14'-8"
A602E	6	80					5'-0"
A605E	6	24					18'-1"
A606E	6	24					27'-4"
A607E	6	24					18'-3"
A608E	6	24					14'-8"
A692E	6	146					23'-8"
C403E	4	75	23'-8"	6"			24'-8"
CD401E	4	16	3'-1"	3'-1"	2'-9 1/8"		6'-2"
CD402E	4	16	3'-1"	3'-1"	2'-0"		6'-2"
CD601E	6	24	5'-0"	5'-0"	4'-5 5/8"		10'-0"
CD602E	6	24	5'-0"	5'-0"	3'-3"		10'-0"
R600E	6	75	2'-0"	1'-9"			3'-9"

NOTES:

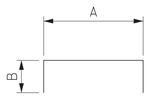
ALL BAR DIMENSIONS ARE OUT-TO-OUT.

ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO FABRICATION.

BARS ENDING IN "E" TO BE EPOXY COATED.

● THREADED FOR MECHANICAL COUPLER.

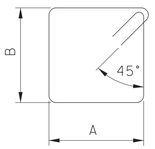
◥ GROUTED BARS IN DRILLED HOLES: VERTICALLY DRILLED HOLES SHALL BE DRILLED 1/4" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.



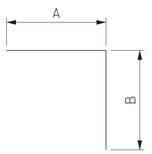
BARS C403E

LENGTH

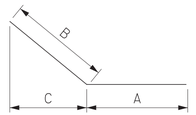
BARS A---E



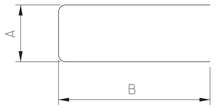
BARS L49-E



BARS R600E



BARS CD--E



BARS H49-E

13.64

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL REPAIR DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR ℄ 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 ℄ 13.76
FED. ID NOS. 19I00400039 ℄ 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES
REGISTERED ENGINEER
B. Evan Graves
STATE OF TENNESSEE
03/30/2026

BR-131-421

DESIGNED BY	Rawleigh S. Richardson Jr.	DATE	2/2/24
DRAWN BY	Rawleigh S. Richardson Jr.	DATE	2/2/24
SUPERVISED BY	Benjamin E. Graves	DATE	2/2/24
CHECKED BY	Lane M. Decker	DATE	2/2/24

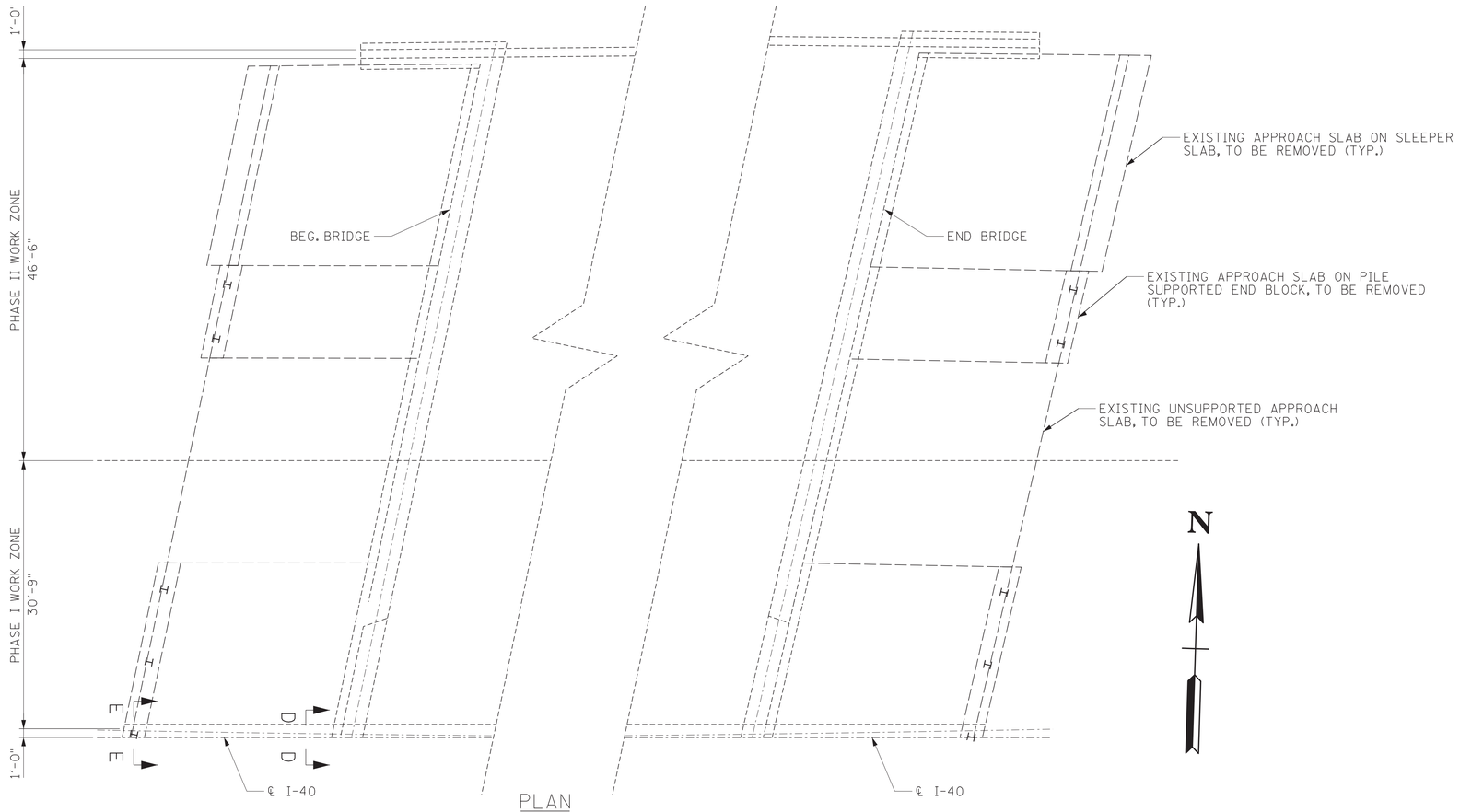
HDR

CONST. NO. 19103-4110-04

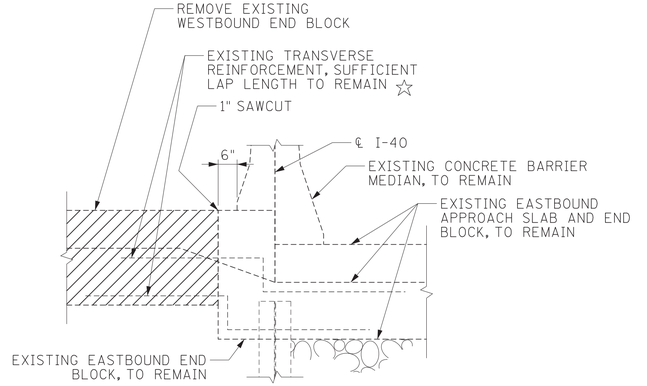
PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



PLAN



SECTION E-E (END BLOCK DEMOLITION)

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)

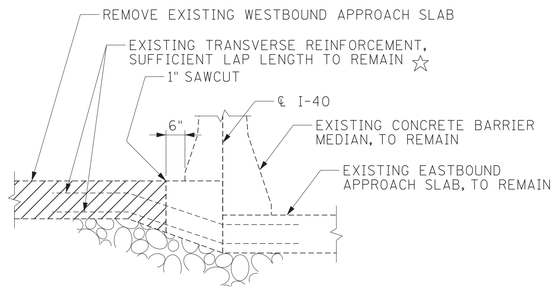
NOTES:

ALL COSTS OF ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO REMOVE THE EXISTING APPROACH SLAB, END BLOCK AND JOINT, PLACE NEW STRUCTURAL STEEL, WELD, AND PROVIDE NEW CONTINUOUS ELASTOMERIC BEARING PAD AND NEW JOINT SYSTEM AT BOTH APPROACHES OF THE WESTBOUND LANES AT BRIDGE NO. 19-I0040-13.76 SHALL BE INCLUDED UNDER ITEM NO. 604-10.44, EXPANSION JOINT REPAIRS, L.F.

FOR ADDITIONAL DETAILS OF APPROACH SLAB AND END BLOCK REPAIR SEE DWG. NO. BR-131-418A, BR-131-423 AND BR-131-424.

☞ DIMENSIONS SHOWN BASED ON THE ABUTMENT DETAILS IN THE 1984 AND 1998 WIDENING PLANS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

☆ 4'-9" MINIMUM LAP LENGTH TO BE PRESERVED FOR #8 BARS.



SECTION D-D (APPROACH SLAB DEMOLITION)

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)

13.76

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL REPAIR DETAILS

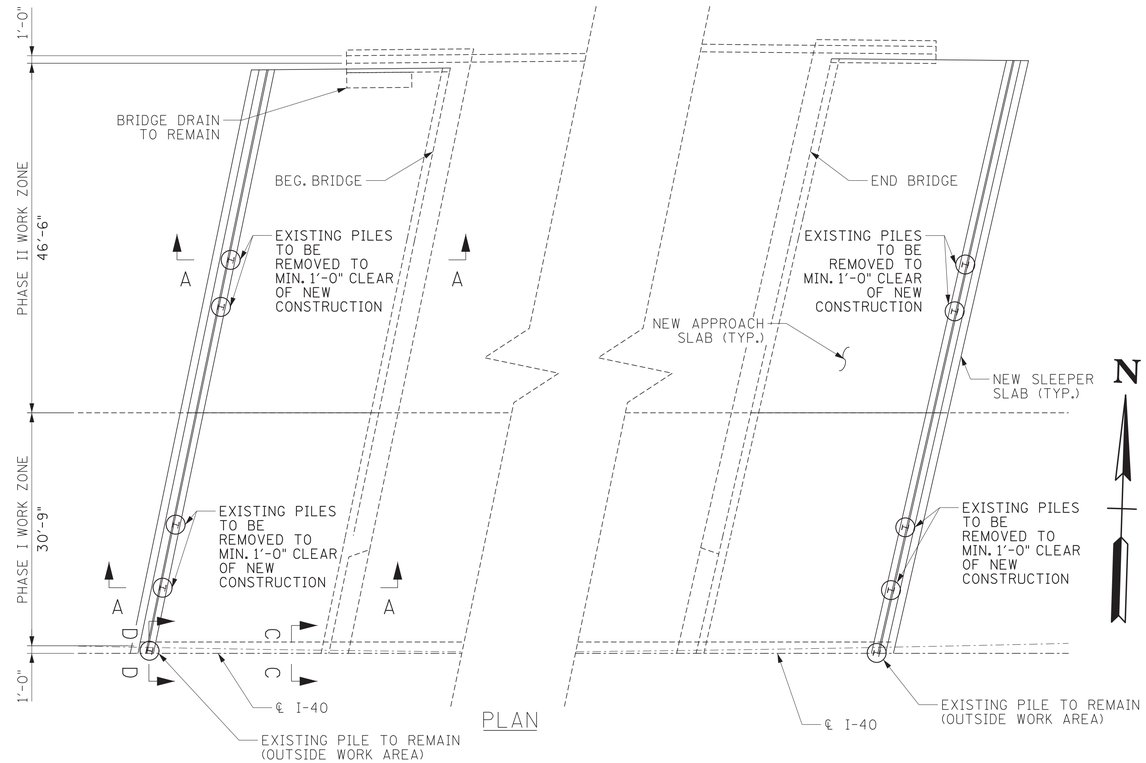
INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES
LICENSED PROFESSIONAL ENGINEER
STATE OF TENNESSEE
03/30/2026

BR-131-422

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

HDR



PLAN

NOTES:

ALL COSTS OF LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO REMOVE THE EXISTING APPROACH SLAB, END BLOCK AND JOINT, REMOVE PORTIONS OF THE EXISTING PILES, PLACE NEW STRUCTURAL STEEL, WELD, AND PROVIDE NEW CONTINUOUS ELASTOMERIC BEARING PAD AND NEW JOINT SYSTEM AT BOTH APPROACHES OF THE WESTBOUND LANES AT BRIDGE NO. 19-I0040-13.76 SHALL BE INCLUDED UNDER ITEM NO. 604-10.44, EXPANSION JOINT REPAIRS, L.F.

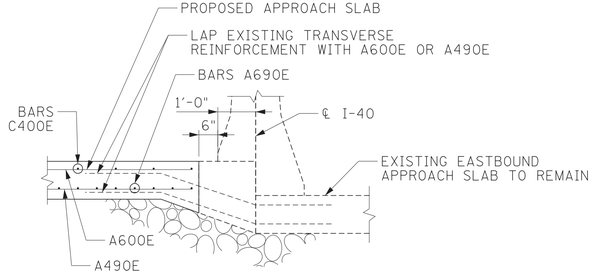
EXISTING PILES TO BE REMOVED TO SUFFICIENT DEPTH (1'-0" CLR. OF NEW CONSTRUCTION) TO ALLOW FOR CONSTRUCTION OF NEW APPROACH SLABS AND SLEEPER SLABS.

CONCRETE FOR ALL EXPANSION JOINT REPAIR AREAS, SLEEPER SLAB REPAIRS, AND APPROACH SLAB REPAIRS TO BE HIGH EARLY STRENGTH CONCRETE WITH A 3000 PSI COMPRESSIVE STRENGTH BEFORE LOADING AND WITHIN 12 HOURS MAXIMUM.

COST OF REINFORCING STEEL FOR APPROACH SLAB AND SLEEPER SLAB SHALL BE PAID FOR UNDER ITEM NO. 604-10.18, REINFORCING STEEL (REPAIRS), L.B. FORMING AND PLACING CONCRETE IN THE APPROACH SLABS SHALL BE PAID FOR UNDER ITEM NO. 604-10.42, CONCRETE REPAIRS, C.F.

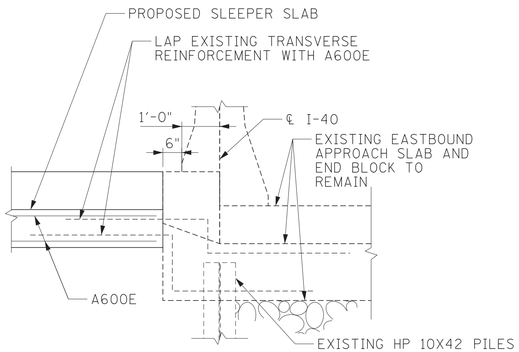
FOR ADDITIONAL NOTES AND DETAILS OF PAVEMENT AT BRIDGE ENDS EXPANSION JOINT, SEE STANDARD DRAWING NO. STD-1-5.

PROVIDE JOINT OPENING OF 2" AT MID-TEMPERATURE OF 60 DEGREES F, WITH A TOTAL MOVEMENT REQUIRED OF 1" (ONE INCH), ACTUAL SETTING AS PER TEMPERATURE CHART ON EXPANSION JOINT SHOP DWGS.



SECTION C-C

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)



SECTION D-D

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

HDR

BILL OF STEEL

END BLOCK REINFORCEMENT (PER APPROACH)

BARS	SIZE	NO. REQ'D.	BENDING DIMENSIONS A	B	C	D	LENGTH
A600E	6	7					30'-7"
A601E	6	7					46'-5"
● A602E	6	14					5'-0"
H490E	4	76	6"	1'-5"			3'-4"
H491E	4	4	6¾"	1'-5"			3'-5"
L490E	4	76	2'-8"	8"			7'-5"
L491E	4	4	2'-11¾"	8"			8'-0"

NOTES:

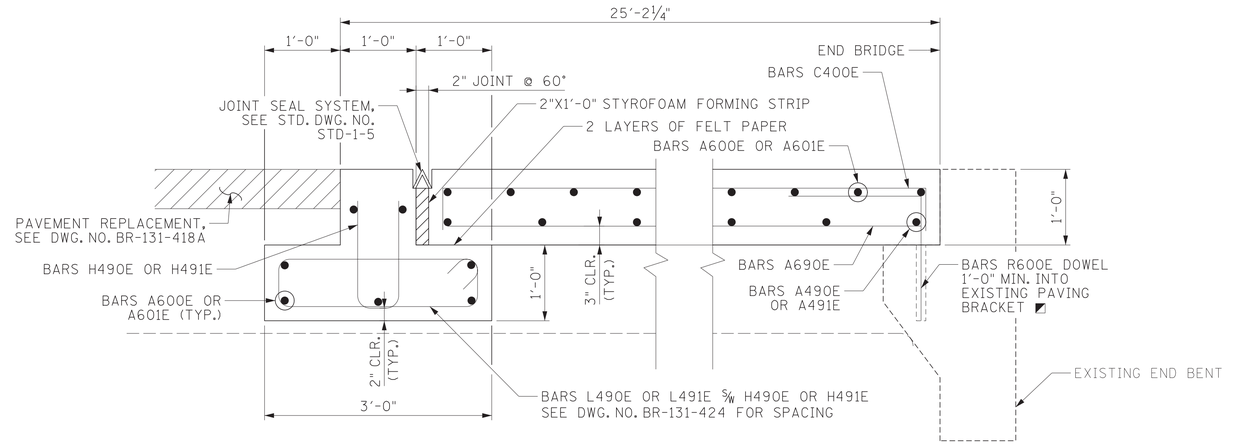
ALL BAR DIMENSIONS ARE OUT-TO-OUT.

ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO FABRICATION.

BARS ENDING IN "E" TO BE EPOXY COATED.

● THREADED FOR MECHANICAL COUPLER.

BAR BILL IS FOR WEST END BLOCK ONLY. EAST END BLOCK SIMILAR.



SECTION A-A

(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)

◩ GROUTED BARS IN DRILLED HOLES: VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.

CONST. NO. 19103-4110-04

PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

☞ DIMENSIONS SHOWN BASED ON THE ABUTMENT DETAILS IN THE 1984 AND 1998 WIDENING PLANS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FOR ADDITIONAL DETAILS OF APPROACH SLAB AND SLEEPER SLAB REPAIR SEE DWG. NO. BR-131-424.

13.76

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL REPAIR DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR & 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 & 13.76
FED. ID NOS. 19I00400039 & 41
DAVIDSON COUNTY
2026

BENJAMIN EVAN GRAVES — REGISTERED ENGINEER — STATE OF TENNESSEE
03/30/2026

BR-131-423

CONST. NO. 19103-4110-04

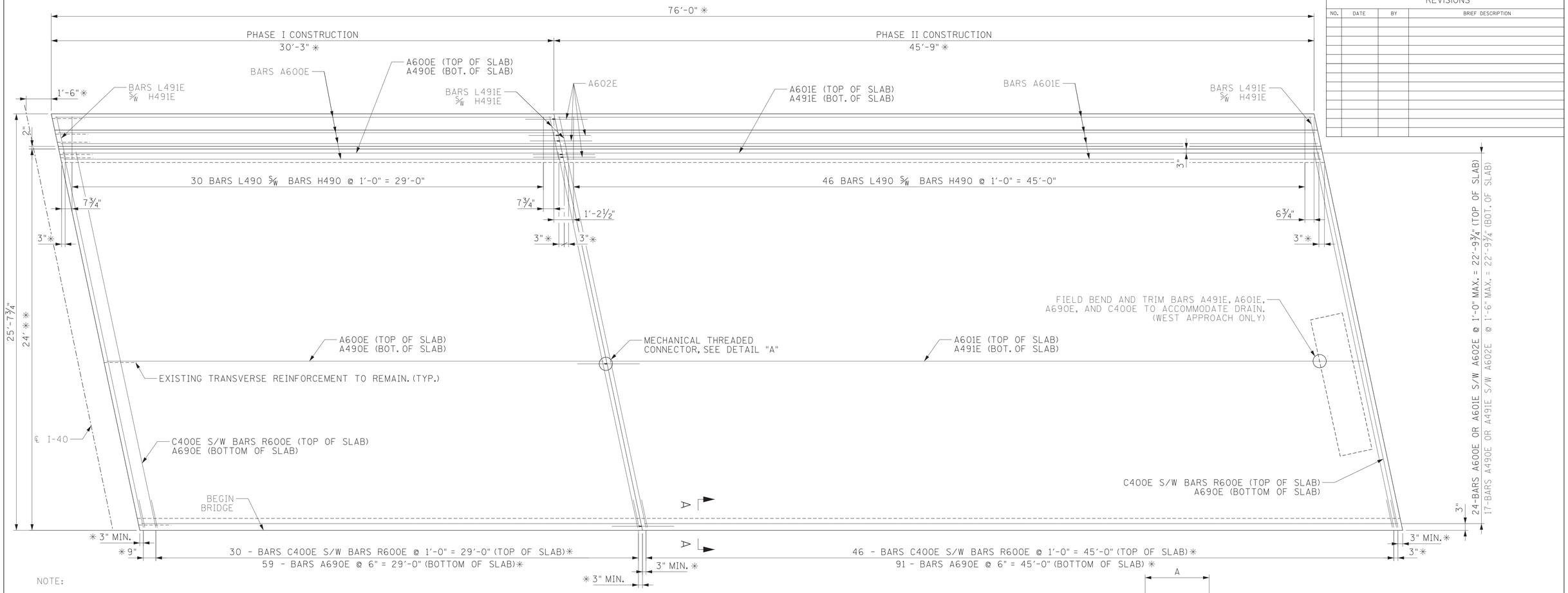
PROJECT NO.	YEAR	SHEET NO.
19103-4110-04	2026	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

* MEASURED PERPENDICULAR TO ℄ OF I-40.

** MEASURED PARALLEL TO ℄ OF I-40.



APPROACH SLAB PLAN

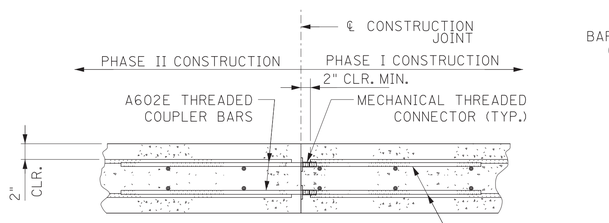
(WEST APPROACH SHOWN, EAST APPROACH SIMILAR)

NOTE:

DIMENSIONS SHOWN BASED ON ABUTMENT DETAILS IN THE 1984 AND 1998 WIDENING PLANS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

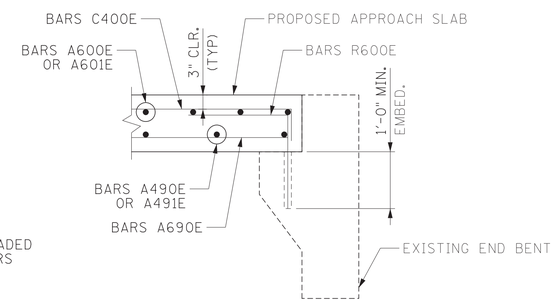
CONSTRUCT WEST APPROACH TO ACCOMMODATE EXISTING BRIDGE DRAIN.

COST OF REINFORCING STEEL FOR APPROACH SLABS TO BE PAID FOR UNDER ITEM NO. 604-10.18 REINFORCING STEEL (REPAIRS), L.B. FORMING AND PLACING CONCRETE IN THE APPROACH SLABS SHALL BE PAID FOR UNDER ITEM NO. 604-10.42, CONCRETE REPAIRS, C.F.



DETAIL "A"

NOTE: THE COST OF MECHANICAL THREADED CONNECTORS AND THE COST OF THREADING THE COUPLER BARS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM NO. 604-10.18



SECTION A-A

BILL OF STEEL

APPROACH SLAB REINFORCEMENT (PER APPROACH)

BARS	SIZE	NO. REQ'D.	BENDING DIMENSIONS A	B	C	D	LENGTH
A490E	4	17					30'-7"
A491E	4	17					46'-5"
A600E	6	24					30'-7"
A601E	6	24					46'-5"
● A602E	6	82					5'-0"
A690E	6	152					23'-7"
C400E	4	78	23'-7"	6"			24'-7"
◣ R600E	6	78	2'-0"	1'-9"			3'-9"

NOTES:

ALL BAR DIMENSIONS ARE OUT-TO-OUT.

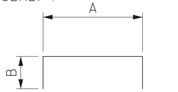
ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO FABRICATION.

BARS ENDING IN "E" TO BE EPOXY COATED.

● THREADED FOR MECHANICAL COUPLER.

BAR BILL IS FOR WEST APPROACH ONLY. EAST APPROACH SIMILAR.

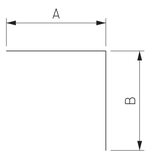
◣ GROUTED BARS IN DRILLED HOLES: VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.



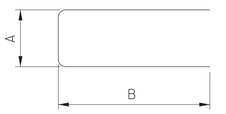
BARS C400E



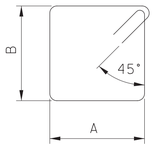
BARS A---E



BARS R600E



BARS H49-E



BARS L49-E

13.76

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

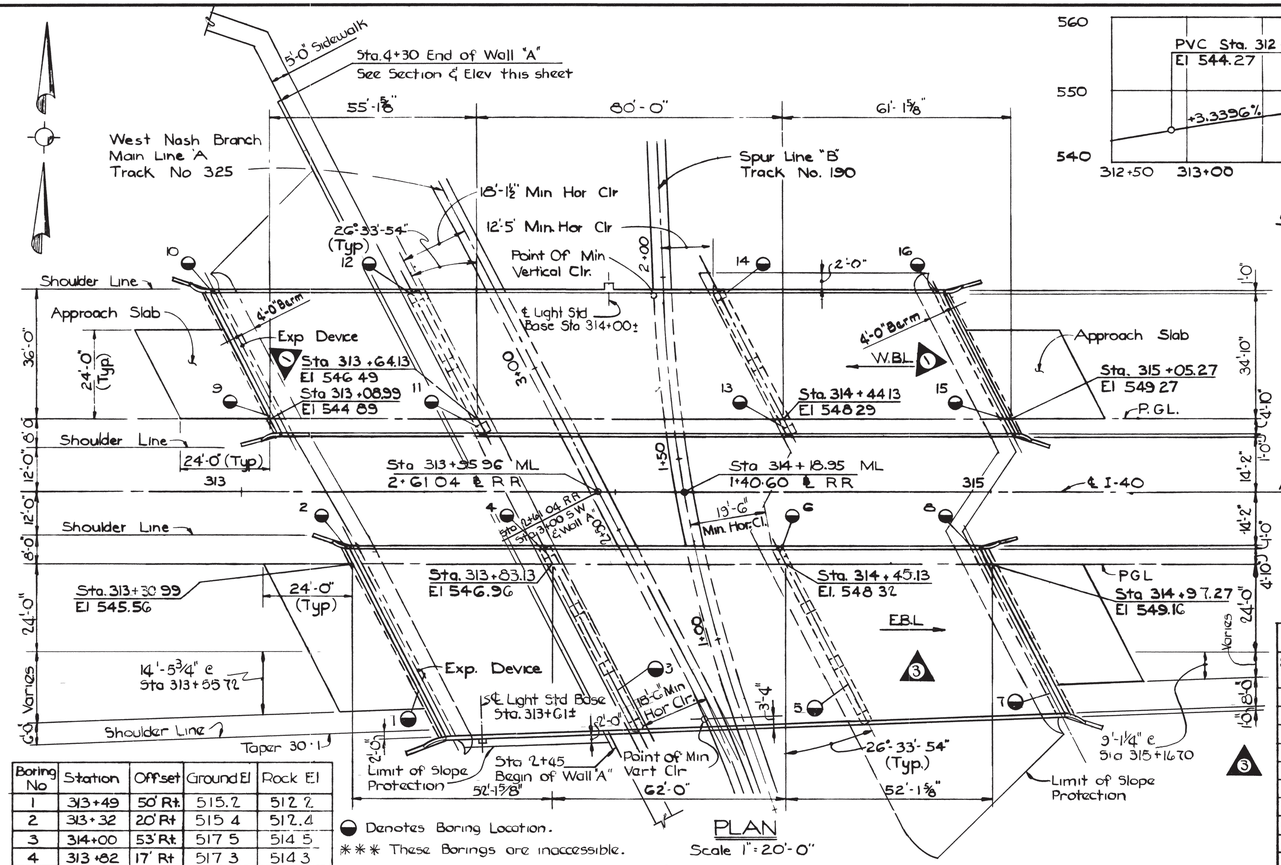
GENERAL REPAIR DETAILS

INTERSTATE 40 (WB LANES) OVER
CSX RR ℄ 40TH AVENUE N.
BRIDGE NOS. 19-I0040-13.64 ℄ 13.76
FED. ID NOS. 19I00400039 ℄ 41
DAVIDSON COUNTY
2026

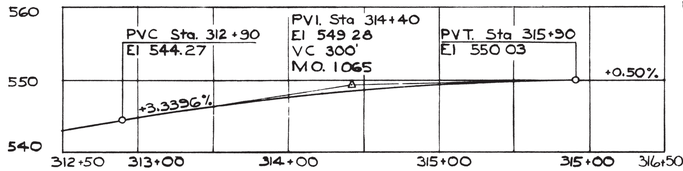
BR-131-424

DESIGNED BY Rawleigh S. Richardson Jr. DATE 2/2/24
DRAWN BY Rawleigh S. Richardson Jr. DATE 2/2/24
SUPERVISED BY Benjamin E. Graves DATE 2/2/24
CHECKED BY Lane M. Decker DATE 2/2/24

BENJAMIN EVAN GRAVES — REGISTERED — No. 119103 — COMMERCE — STATE OF TENNESSEE
03/30/2026

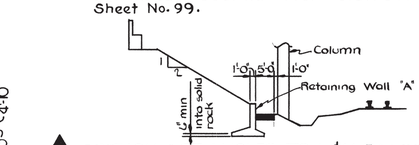


PLAN
Scale 1"=20'-0"

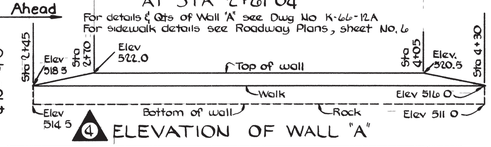


PROFILE I-40
Scales. Hor 1"-50'-0" Vert 1"=10'-0"

Note: Use 6"ϕ C.P.M.P. and Porous backfill behind each abutment. For detail see Sheet No. 99.



4 SECTION ℄ RT ANGLES TO L&N RAILROAD AT STA 2+61.04



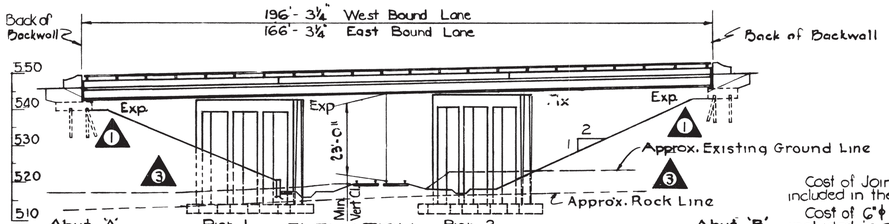
4 ELEVATION OF WALL "A"

INDEX OF DRAWINGS

Sheet No.	Titles
107	General Plan and Elevation E.B.L. and W.B.L.
108	Abutments W.B.L.
109	Abutment Details E.B.L. and W.B.L.
110	Piers W.B.L.
111	Framing Plan and Details W.B.L.
112	Slab Plan W.B.L.
113	Reinforcing Steel Schedule E.B.L. and W.B.L.
96	Standard Bolted Beam Splice Details
97	Typical Standard Steel Details
98	Typical Standard Steel Details
99	Standard Abutment and Retaining Wall Details
100	Light Standard Base Detail.
2 252	Splice & Bearing Details K-38-155
254	Bridge Railing K-38-154
3 108A	Abutment A E.B.L.
108B	Abutment 'B' E.B.L.
110A	Piers E.B.L.
111A	Framing and Slab Plan E.B.L.
107A	Retaining Wall "A" Details K-66-12A

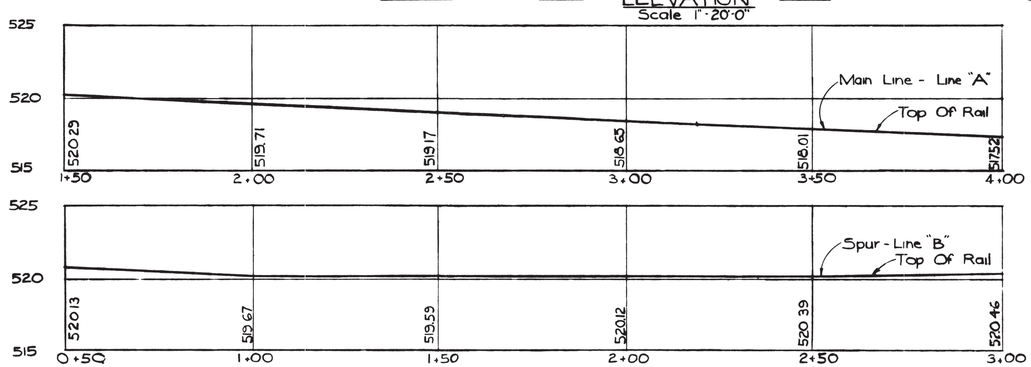
Boring No	Station	Offset	Ground El	Rock El
1	313+49	50' Rt.	515.2	512.2
2	313+32	20' Rt	515.4	512.4
3	314+00	53' Rt.	517.5	514.5
4	313+82	17' Rt	517.3	514.3
5	314+57	53 Rt	520.1	***
6	314+39	17' Rt	520.3	***
7	315+15	50' Rt.	521.4	517.4
8	314+99	17' Rt.	521.1	517.1
9	313+11	20' Lt	514.4	511.4
10	312+94	50 Lt	514.4	511.4
11	313+65	17' Lt	516.7	513.7
12	313+47	53' Lt	515.8	512.8
13	314+47	17' Lt	519.4	515.9
14	314+29	53' Lt.	519.7	515.7
15	315+03	17' Lt	521.6	517.6
16	314+94	50' Lt	520.8	516.8

● Denotes Boring Location.
*** These Borings are inaccessible.



ELEVATION
Scale 1"-20'-0"

Cost of Joint Sealer and Bituminous Fiber Material to be included in the price bid for Class 'A' Concrete.
Cost of 6"ϕ C.P.M.P. and porous backfill material to be included in price of items bid on.
Excavation based on lower road profile.
1 Lighting Lump Sum is for complete installation of all structural lighting as shown on plans.



PROFILE OF RAILROAD
Scales Hor 1"=20'-0", Vert 1"=5'-0"

1 ESTIMATED QUANTITIES

		Excavation Dry CY	Excavation Rock CY	Concrete Class A CY	Reinforcing Steel Lbs	Steel Structures L.S.	Bearing Piles 10BP42 Lin Ft	Bridge Railing Lin Ft	Linseed Oil Treatment ** Sq Yds	Rock Drilling Lin Ft	Structure Lighting L.S.
E.B.L.	Superstructure			206.1	73,480			324	950		
	Abutment A			38.9	5,260		310		55		
	Pier 1	45	26	61.3	12,890					24	
	Pier 2	65	26	60.6	12,740					24	
	Abutment B			36.3	4,950		270		50		
	Total E.B.L.	110	52	403.2	109,320		580	324	1,055	48	
W.B.L.	Superstruc.			138.3	64,630			387	970		
	Abutment A			29.8	4,290		240		60		
	Pier 1	35	10	45.2	10,935					18	
	Pier 2	60	10	48.5	12.775					18	
	Abutment B			29.8	4,290		240		60		
	Total W.B.L.	95	20	351.6	96,320		480	387	1,090	36	
	Total	205	72	754.8	206,240	Lump Sum*	1,060	711	2,145	84	Lump Sum

* Total Estimated Weight of Steel Structures 356,680 Lbs. Including Bearing Devices, Roadway Expansion Devices, Shear Connectors and High Tensile Bolts.

** Special provision on Linseed Oil Treatment does not apply to Bent Caps Cost of Light Standard Base, including concrete and reinforcing to be included in price bid for Bridge Railing

REVISION
1 10-20-67 T.R.C. Elev; Plan; Notes & Quantities
2 5-9-68 DWF Drawing No
3 6-17-68 Plan, Elevation, Piers, Drawing No. & Quantities (E B L)
4 7-16-68 E L O Retaining Wall Added

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	107	458

GENERAL NOTES

SPECIFICATIONS.
General - Tennessee Department of Highways "Road and Bridge Specifications, 1951 Edition, and the Supplemental Specifications and Special Provisions"
Design - AASHO Standard Specifications for Highway Bridges 1965 Edition.

Capacity - H5 20-44 Loading and the BPR modified loading for military vehicles

CONCRETE:
All Concrete shall be Class A' Chamfer all exposed edges of concrete 1"x1" unless otherwise shown or noted

REINFORCEMENT:
All reinforcing steel shall be intermediate or hard grade
All reinforcing bar dimensions on the detail drawings are to centerline of bar except where the clear distance is noted from face of concrete

STRUCTURAL STEEL:
Structural Steel shall conform to ASTM A36

PILES:
All Piles shall be 10BP42 and driven to refusal or a minimum bearing of 50 tons

FOUNDATIONS:
The foundations of Abutments shall be on piles
The foundations of Piers shall rest on rock
When foundations for Piers have been uncovered, holes 6 feet deep shall be drilled into the rock at points designated by the Engineer. No reinforcing steel shall be ordered until final footing elevations are determined

PAINT (Basic Lead Silica Chromate)
See Special Provisions regarding Section 132 Steel Structures (Painting). No paint shall be applied to the top surfaces of the top flanges
Splices and other field connections shall be cleaned and primed before forming slab

WELDING
Welding shall be in accordance with the current edition of the AWS Specifications for Welded Highway and Railway Bridges See Special Provisions Regarding Welded Structures. Cost of Magnetic Particle and Radiographic Inspection to be included in cost of items bid on.

HIGH TENSILE BOLTS:
See note on Sheet No 96

STUD SHEAR CONNECTORS:
Stud shear connectors shall conform to the requirements of AASHO Standard Specifications for Highway Bridges Article 2.10.3A and 2.10.23

FILLS
Fills at ends of Bridge to be in place and thoroughly compacted before Abutment Piles are driven

SHOP INSPECTION OF STEEL STRUCTURE.
The Contractor, as soon as he receives his work orders, shall notify the Bridge Engineer, in writing, who will supply the Structural Steel and the location of the plant where it will be fabricated

FABRICATION OF STRUCTURAL STEEL:
No Fabrication shall be started until the materials involved have been approved by the Tennessee Highway Division of Tests,

Heat numbers on the main material must be preserved or transferred during fabrication and shop painting so that they will be identifiable in the field.

SPECIAL NOTE FOR RAILROAD CROSSING:
The Contractor shall conduct his work so as to protect the railway tracks and properties from damage The work shall be done in accordance with regulations stipulated by the L&N RR Co so as to maintain clearance and not interupt traffic.

1 BRIDGE RAILING: Build Bridge railing according to Std. Dwg. K-38-154.
(W.B.L.) N. and S. Par. Dim. 'X' = 1'-0¾", N = 21 Spaces @ L = 9'-1" (Typical for Alum. & Steel bridge railing)
3 (E.B.L.) N Par. Dim. X = 0'-10⅛" N = 17 Spaces @ L = 9'-6"
S Par Dim X = 1'-0½" N = 16 Spaces @ L = 9'-11"

LIGHTING:
For details of light standards see Sheets No 90 and 100.

JOINT SEALER:
See Special provisions, Class "A" or "B"

NOTE: All drawings this structure revised 8-16-68 due to widening of EB lane structure

SCALE: AS NOTED

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NO. 2 & 2A
I-40 OVER L. & N. RAILROAD
DAVIDSON COUNTY
GENERAL PLAN AND ELEVATION

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-12

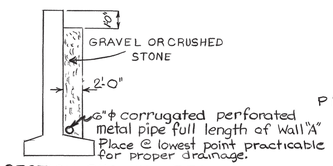
DESIGNED BY A.A.A DATE
DRAWN BY A.D.F DATE
TRACED BY N.M.S DATE
CHECKED BY J.S.P. & S.P. DATE Aug 67

RECORD PRINT

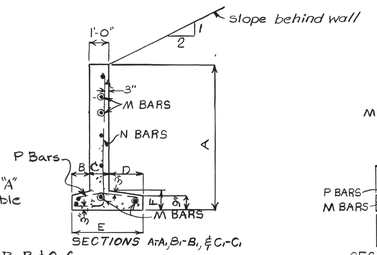
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	107A	458

REVISIONS

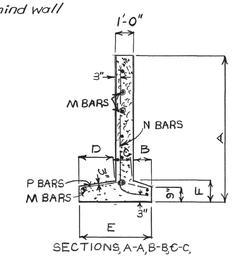
NO	DATE	BY	BRIEF DESCRIPTION
1	1-3-69	DWF	Excavation Note
2	16-Dec-71	R.m.D	Conc. Qty.



SECTION SHOWING DRAIN



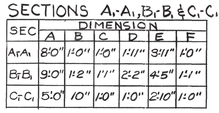
SECTIONS A-A, B-B, & C-C



SECTIONS A-A, B-B, & C-C

SEC	DIMENSION					
	A	B	C	D	E	F
A -A	4'0"	4"	1'0"	8"	2'0"	1'0"
B -B	8'0"	1'0"	1'0"	1'-11"	3'-11"	1'0"
C -C	9'0"	1'2"	1'-1"	2'2"	4'5"	1'-1"

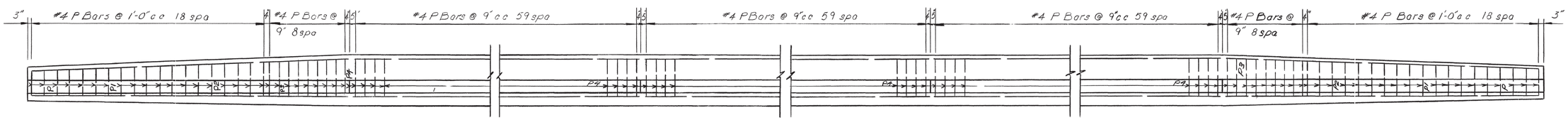
SECTIONS A-A, B-B & C-C



SECTIONS A_1-A_1, B_1-B_1, & C_1-C_1

SEC	DIMENSION					
	A	B	C	D	E	F
A_1-A_1	8'0"	1'-0"	1'0"	1'-11"	3'-11"	1'0"
B_1-B_1	9'0"	1'-2"	1'1"	2'-2"	4'-5"	1'-1"
C_1-C_1	5'0"	10"	1'0"	1'0"	2'-10"	1'0"

ELEVATION
Not to scale



PLAN

BILL OF STEEL

BAR	SIZE	NO	LGTH
M	#9	1	5'6"
M1	"	1	14'-6"
M2	"	1	22'-6"
M3	"	16	24'-6"
M4	"	30	44'-6"
M5	"	1	4'-0"
M6	"	1	12'-6"
M7	#4	1	21'-6"
N	#4	4	5'-6"
N1	"	6	5'-9"
N2	"	10	6'-9"
N3	"	6	7'-3"
N4	"	4	7'-6"
N5	"	4	7'-9"
N6	"	8	8'-0"
N7	"	5	8'-6"
N8	"	70	8'-9"
N9	"	72	9'-0"
N10	#4	73	9'-6"

BAR	SIZE	NO	LGTH
P	#4	10	2'-0"
P1	"	14	2'-3"
P2	"	15	2'-6"
P3	"	19	2'-9"
P4	#4	185	3'-0"

* ESTIMATED QUANTITIES

CONC CLASS "A" 744 CY YD. (2)
REINF STEEL 32,02 LBS

COST OF 6"ϕ C.P.M.P (18 gauge) SHALL BE INCLUDED IN PRICE OF ITEMS BID ON

GENERAL NOTES

SPECIFICATIONS: GENERAL: TENN. DEPT OF HIGHWAYS "ROAD & BRIDGE SPECIFICATIONS" 1951 EDITION AND THE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

CONCRETE: ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS "A". CHAMFER ALL EXPOSED EDGES OF CONCRETE 1"X1" UNLESS OTHERWISE SHOWN OR NOTED

EXPANSION & CONSTRUCTION JOINTS: SEE STANDARD DRAWING , SHEET NO. 99

DRAINAGE & POROUS BACKFILL: SEE STANDARD DRAWING , SHEET NO. 99

(1) * RETAINING WALL: EXCAVATION DRY (BRIDGE) SHALL BE PAID FOR UNDER ITEM NO 17-2. EXCAVATION ROCK (BRIDGE) SHALL BE PAID FOR UNDER ITEM NO 17-4, POROUS BACK-FILL SHALL BE PAID FOR UNDER ITEM NO. 55-2, MINERAL AGGREGATE (T.H.B.S.C.). ALL OTHER ITEMS ARE ALSO TO BE PAID FOR UNDER THEIR APPROPRIATE ITEM NO. AND INCLUDED IN THE ESTIMATED ROADWAY QUANTITIES.

FOR LOCATION OF WALL "A", SEE BRIDGE DWG K-66-12 & ROADWAY SHEET NO. 6.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

RETAINING WALL "A" NEAR STRUCTURE NO. 2 & 2A DAVIDSON COUNTY

DESIGNED BY _____ DATE _____
DRAWN BY JAMES DAVIS & JIMMY PARIS DATE _____
TRACED BY _____ DATE _____
CHECKED BY _____ DATE _____

CORRECT _____ BRIDGE ENGINEER

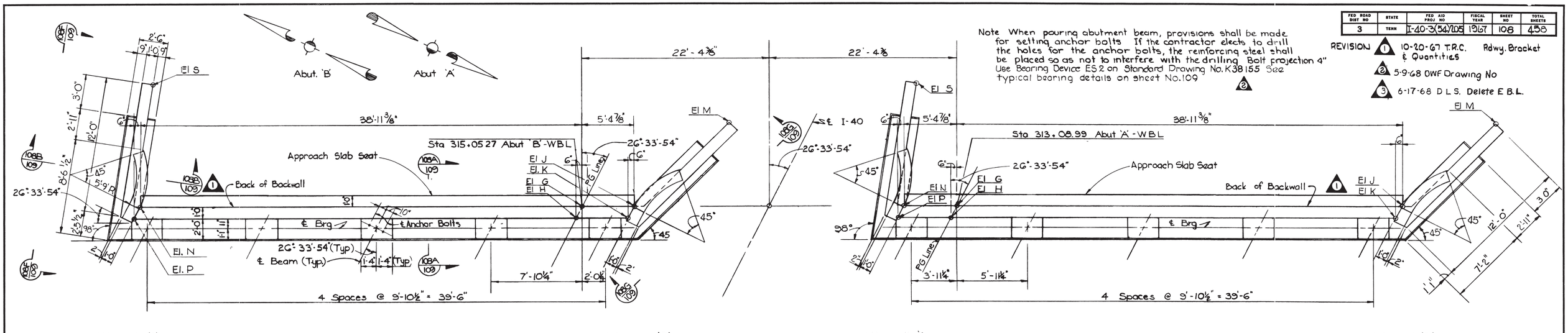
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-12A

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)705	1967	108	458

REVISION
1. 10-20-67 T.R.C. Rdwy. Bracket & Quantities
2. 5-9-68 OWF Drawing No
3. 6-17-68 D.L.S. Delete E.B.L.

Note When pouring abutment beam, provisions shall be made for setting anchor bolts If the contractor elects to drill the holes for the anchor bolts, the reinforcing steel shall be placed so as not to interfere with the drilling Bolt projection 4" Use Bearing Device ES 2 on Standard Drawing No. K 38 155 See typical bearing details on sheet No. 109

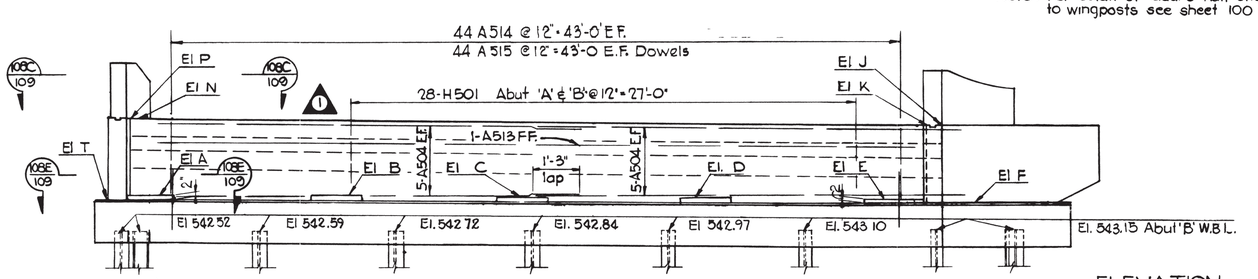


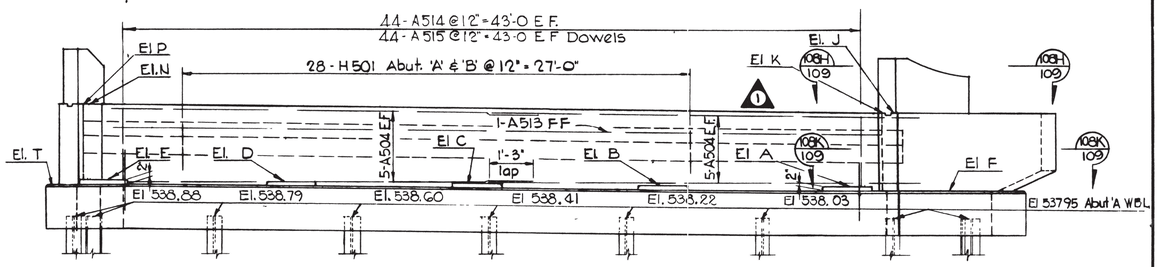
Wingwall 'A' — ABUT 'B' W.B.L. — Wingwall 'B'

PLAN

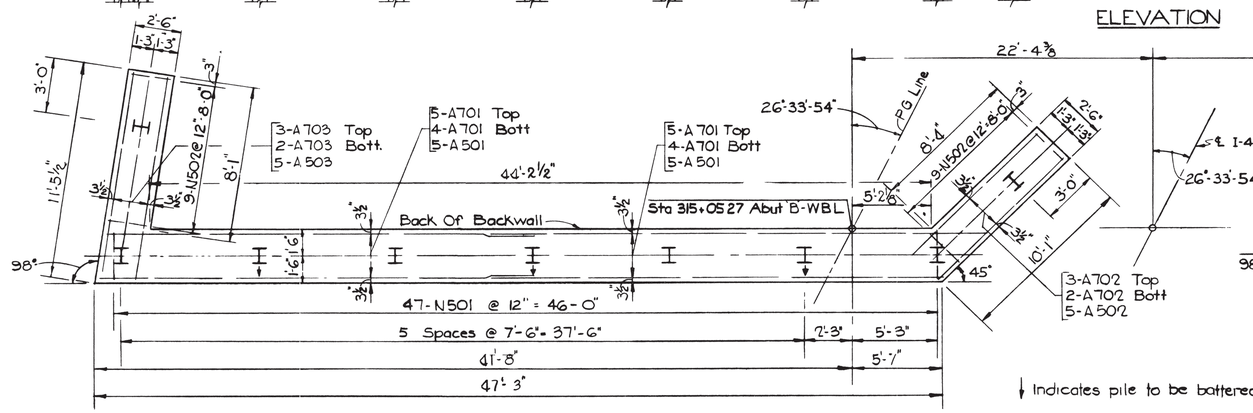
Wingwall 'A' — ABUT. 'A' W.B.L. — Wingwall 'B'

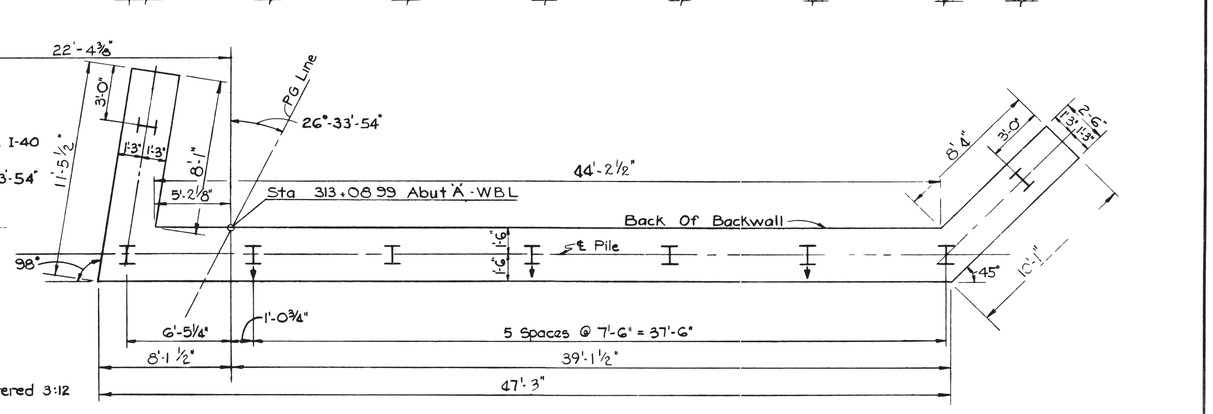
Note: For detail of Guard Rail attachment to wingposts see sheet 100





ELEVATION





FOOTING PLAN

NOTE: Apply Linseed Oil Treatment to the top surface and front face of abutment backwall, top surface of abutment seat, and the vertical and top surfaces of wing and post.

ESTIMATED QUANTITIES

		Concrete Class 'A' Cu. Yds.	Reinforcing Steel Lbs
W.B.L.	Abutment 'A'	298	4,290
	Abutment 'B'	298	4,290

TABLE OF ELEVATIONS

		A	B	C	D	E	F	G	H	J	K	M	N	P	S	T
WBL	Abutment 'A'	539.62	539.86	540.09	540.33	540.56	539.45	544.89	544.92	543.96	544.00	543.61	545.01	545.05	544.68	540.38
	Abutment 'B'	544.19	544.36	544.51	544.66	544.82	544.65	549.27	549.25	549.35	549.33	549.48	548.66	548.65	548.81	544.02

NOTE: For Reinforcing Steel see Abut. "A"

NOTE: For Drain in back of Abutments, see sheet 99

SCALE: ¼" = 1'-0"

DESIGNED BY A.A.A. DATE
DRAWN BY A.D.E. DATE
TRACED BY N.M.S. DATE
CHECKED BY J.S.P. & S.P. DATE Aug 67

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO. 2 & 2A I-40 OVER L & N RAILROAD DAVIDSON COUNTY ABUTMENTS W.B.L.

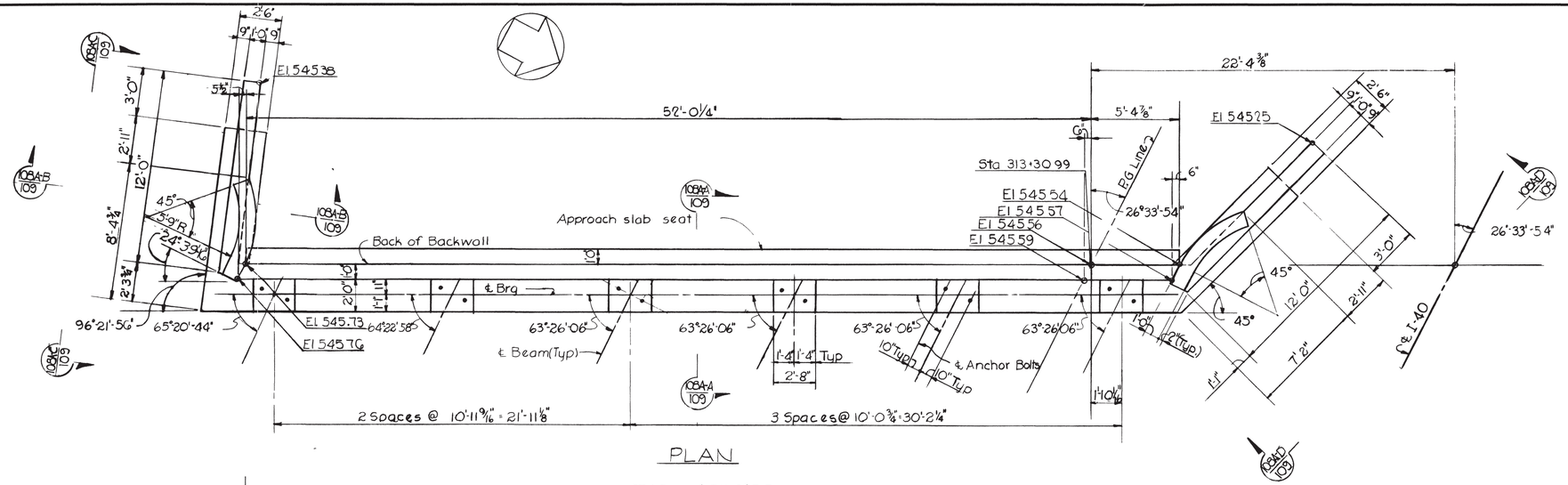
KNOERLE, BENDER, STONE & ASSOCIATES, INC
NASHVILLE, TENN. BALTIMORE, MD

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

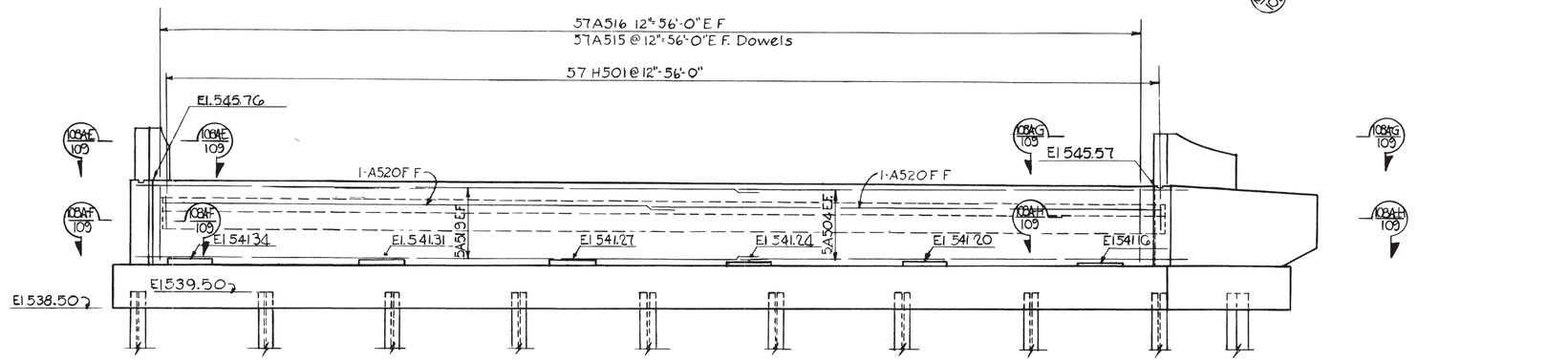
K-66-13

MICROFILMED

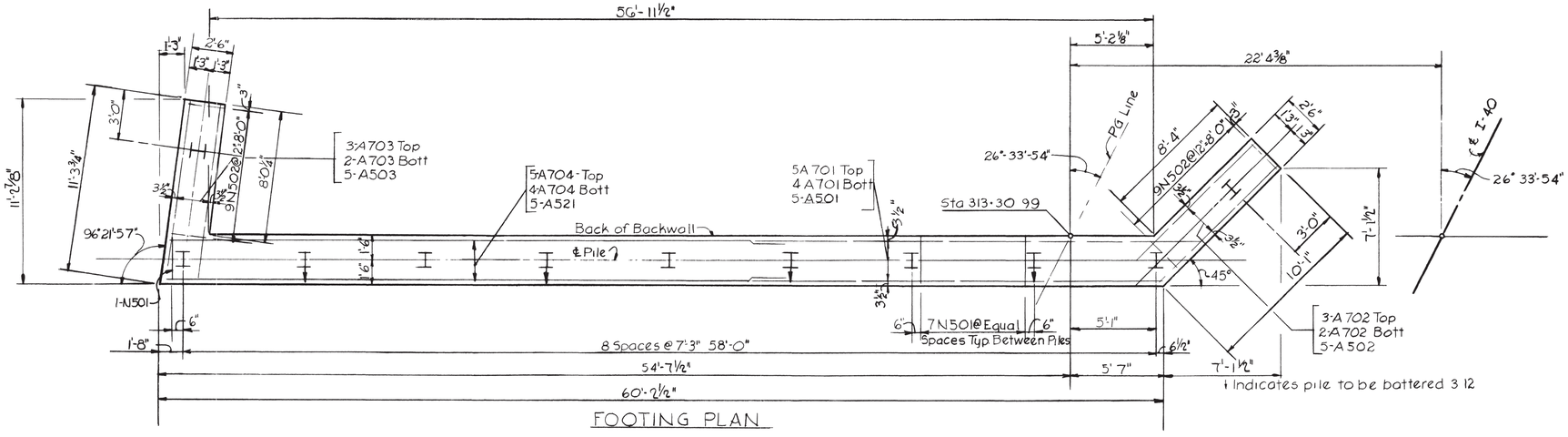
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	108A	458



PLAN



ELEVATION



FOOTING PLAN

ABUTMENT 'A' E B L

Scale 1/4" = 1'-0"

ABUTMENT NOTES

1. When pouring abutment beam, provisions shall be made for setting anchor bolts If the contractor elects to drill the holes for the anchor bolts, the reinforcing steel shall be placed so as not to interfere with the drilling. Bolt projection 4" Use Bearing Device ES-2. on Standard Drawing No K 38-155 See typical bearing details on Sheet 109.
2. Apply Linseed Oil Treatment to the top surface and front face of abutment backwall, top surface of abutment seat and the vertical and top surfaces of wing and post.
3. For detail of Guard Rail attachment to wingpost see sheet 100
4. For Drain in Back of Abutments, see Sheet 99
5. Top of Backwall to conform to roadway slope and grade.

ESTIMATED QUANTITIES	
CONCRETE CLASS 'A' C.Y.	REINFORCING STEEL L.B.S
389	5260

DESIGNED BY L A I DATE 6-21-68
DRAWN BY L A I DATE 6-21-68
TRACED BY D.L.S DATE 6-21-68
CHECKED BY P.L.T DATE 7-2-68

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

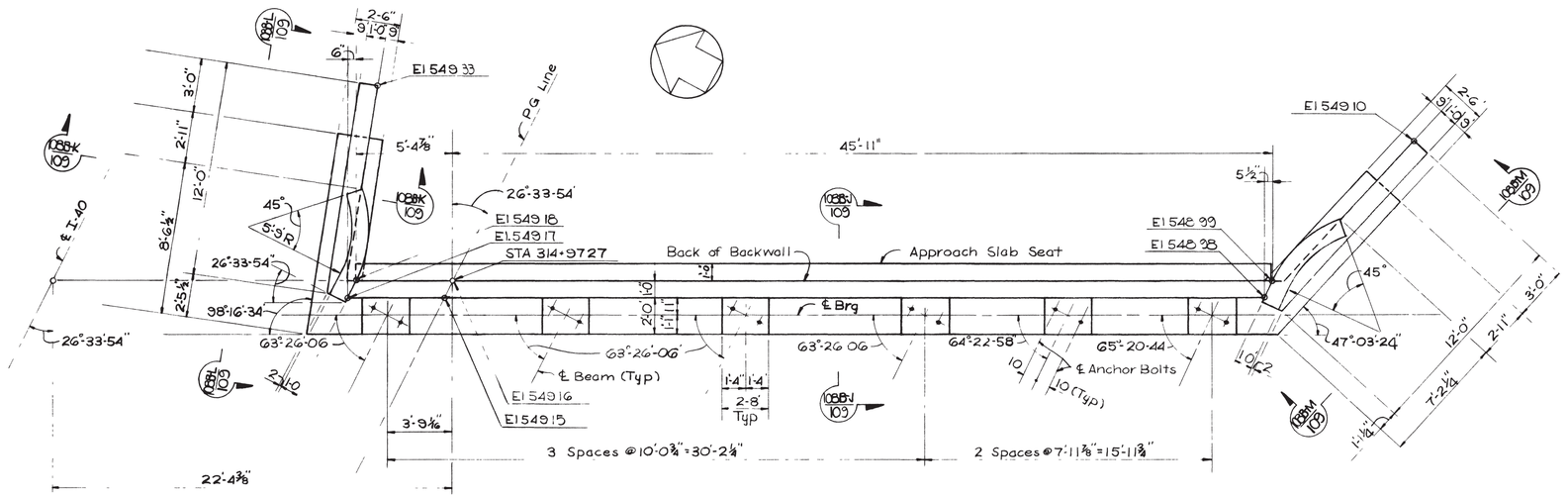
STRUCTURES NO 2 & 2A
I-40 OVER L&N RAILROAD
DAVIDSON COUNTY
ABUTMENT 'A' E.B.L.

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

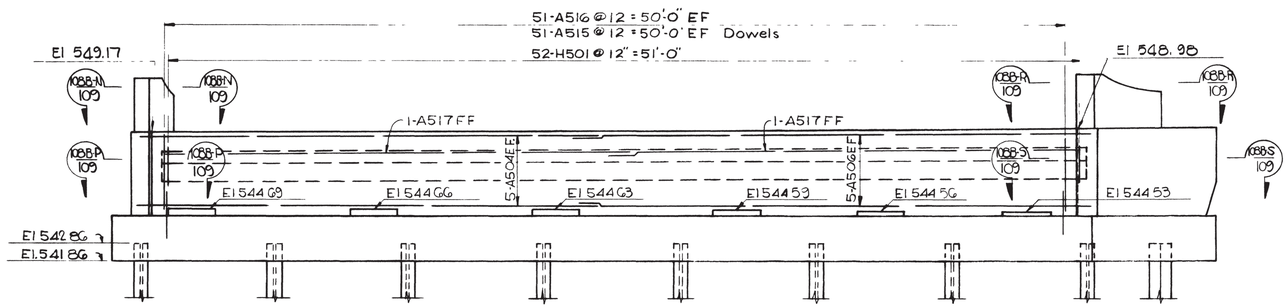
CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-13A

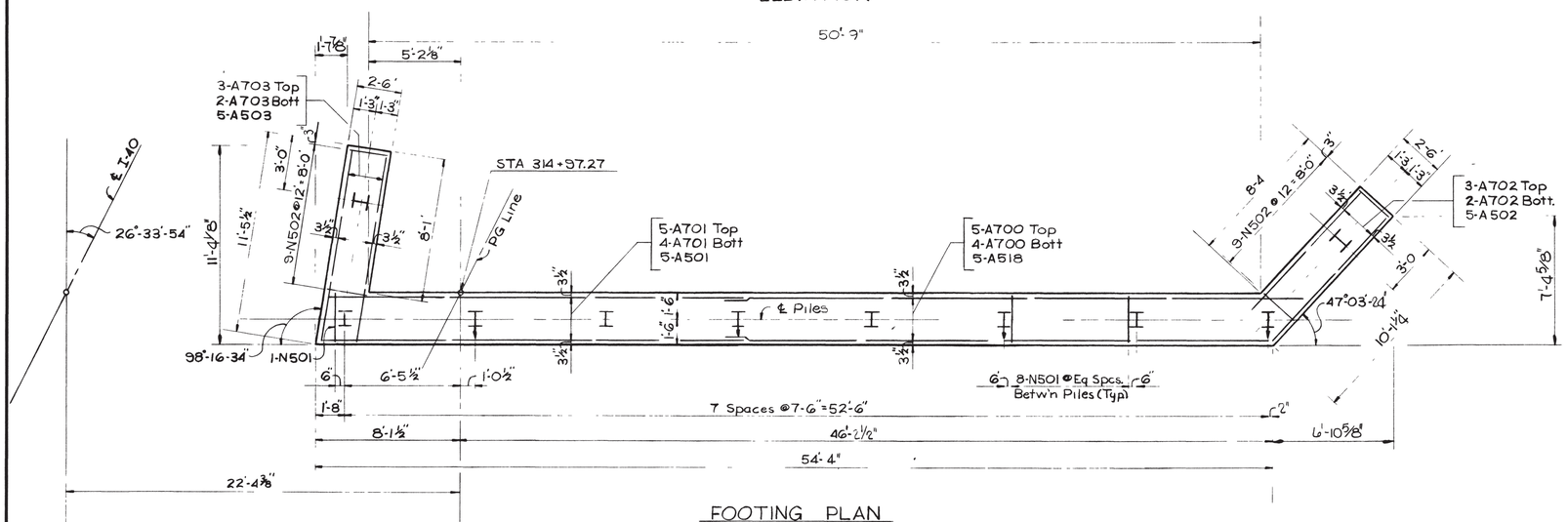
FED ROAD DIST NO	STATE	FED AID PROJ. NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	108B	458



PLAN



ELEVATION



FOOTING PLAN

ABUTMENT 'B' E.B.L.

Scale: ¼" = 1'-0"

Note:
For Abutment Notes, see Sheet 108A

ESTIMATED QUANTITIES	
CONCRETE CLASS 'A' C.Y.	REINFORCING STEEL LBS.
36.3	4950

DESIGNED BY	L A I	DATE	6-21-68
DRAWN BY	L A I	DATE	6-21-68
TRACED BY	J C R	DATE	6-21-68
CHECKED BY	P.L.T.	DATE	7-2-68

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO 2 & 2A
I-40 OVER L&N RAILROAD
DAVIDSON COUNTY
ABUTMENT 'B' E.B.L.

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER

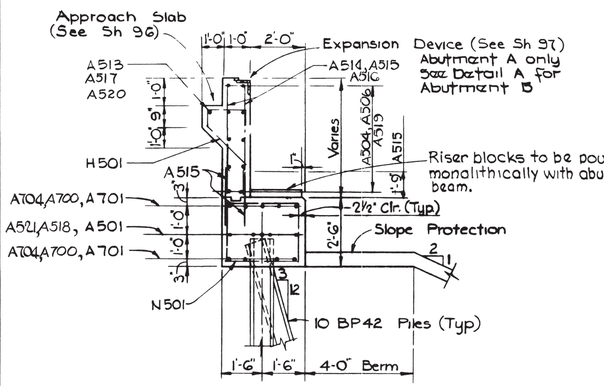
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-138

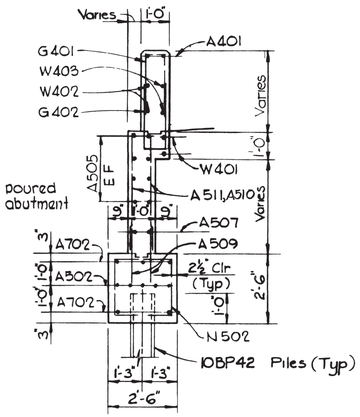
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	109	458

5 G-17-G8-GA-Revised (E.B.L. Section designations added)

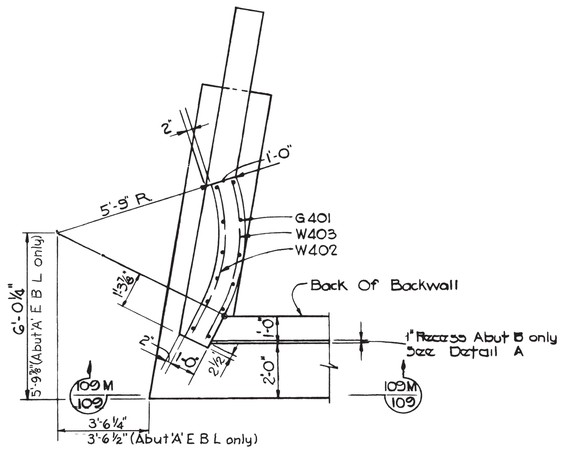
Note.
Abutment backwall to be poured simultaneously with end of slab to facilitate placing of expansion device.



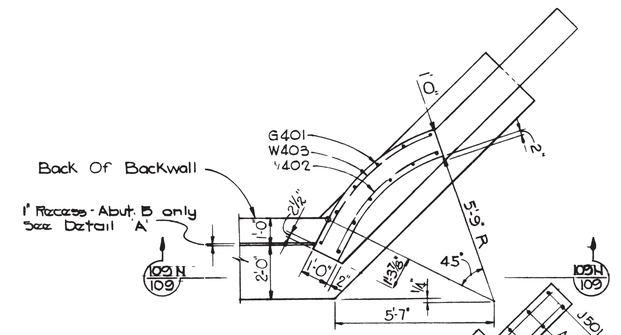
SECTION 108A, 108A-A, 108B-J
Scale. ⅜"=1'-0"



SECTION 108B, 108A-B, 108B-K
Scale ⅜"1'-0"

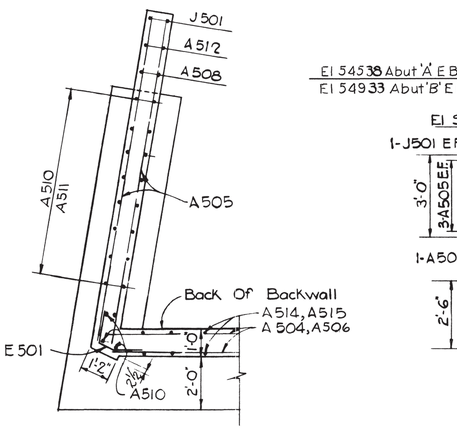


SECTION 108C, 108A-F, 108B-N
Scale: ⅜"=1'-0"

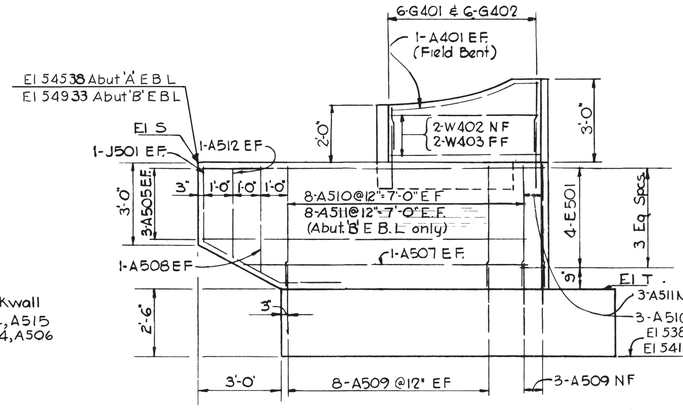


SECTION 108H, 108A-G
Scale ⅜"=1'-0"

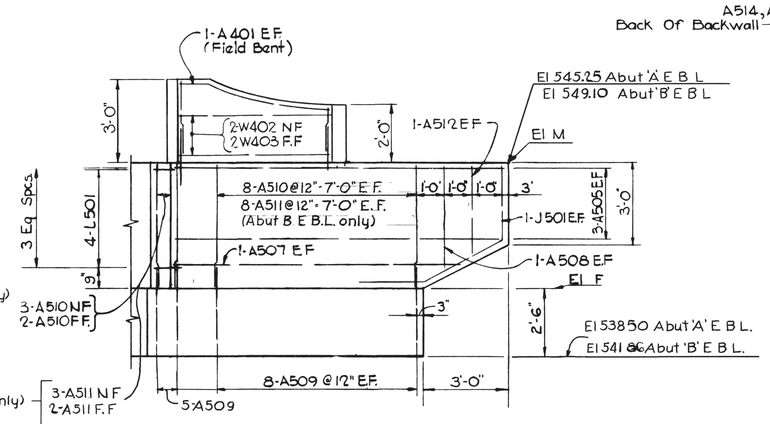
SECTION 108K, 108A-H, 108B-S
Scale ⅜"=1'-0"



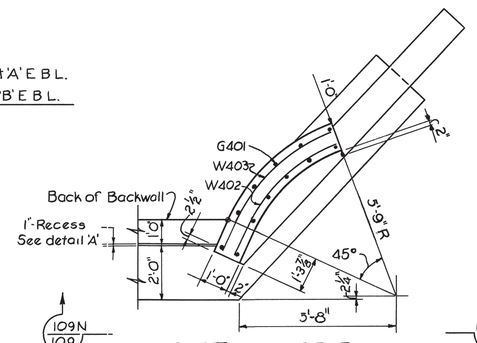
SECTION 108E, 108A-F, 108B-P
Scale: ⅜"=1'-0"



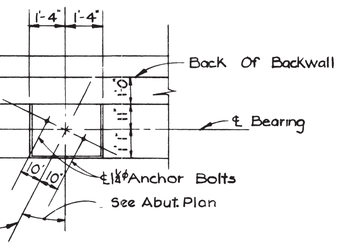
VIEW 108F, 108A-C, 108B-L
Scale ⅜"=1'-0"



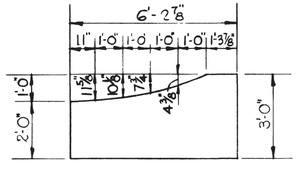
VIEW 108G, 108A-D, 108B-M
Scale ⅜"=1'-0"



SECTION 108B-R
Scale ⅜"=1'-0"

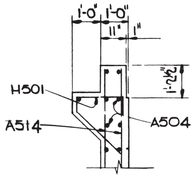


TYPICAL BEARING DETAIL AT ABUTMENT
Scale. ⅜"=1'-0"

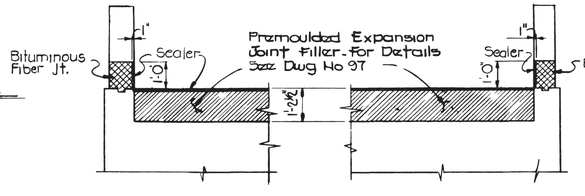


DEVELOPED WINGPOST ALONG ℄
Scale ⅜"=1'-0"

Note
The abutment backwall shall not be poured until superstructure is in place.



DETAIL A
Scale: ⅜"=1'-0"



VIEW 109M
(Abut B W B L. & E. B L.)
Scale: ⅜"=1'-0"

VIEW 109N
Scale: ⅜"=1'-0"

SCALE: AS NOTED

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NO 2 & 2A
I-40 OVER L & N. RAILROAD
DAVIDSON COUNTY
ABUTMENT DETAILS

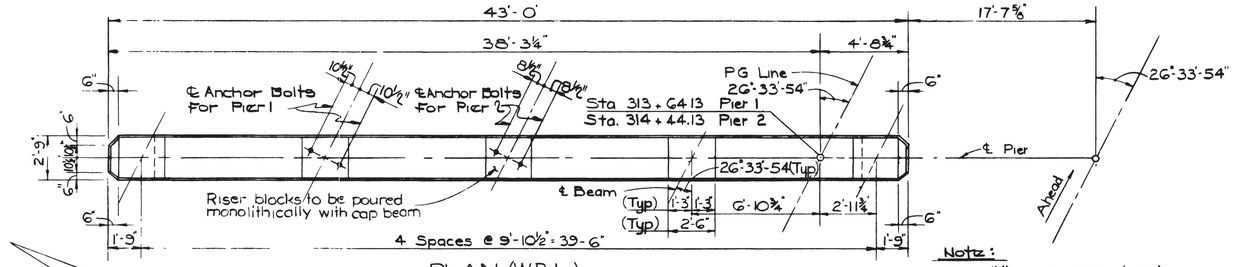
KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

DESIGNED BY A.A.A. DATE
DRAWN BY A.D.F. DATE
TRACED BY N.M.S. DATE
CHECKED BY J.S.P. & S.B. DATE Aug 67

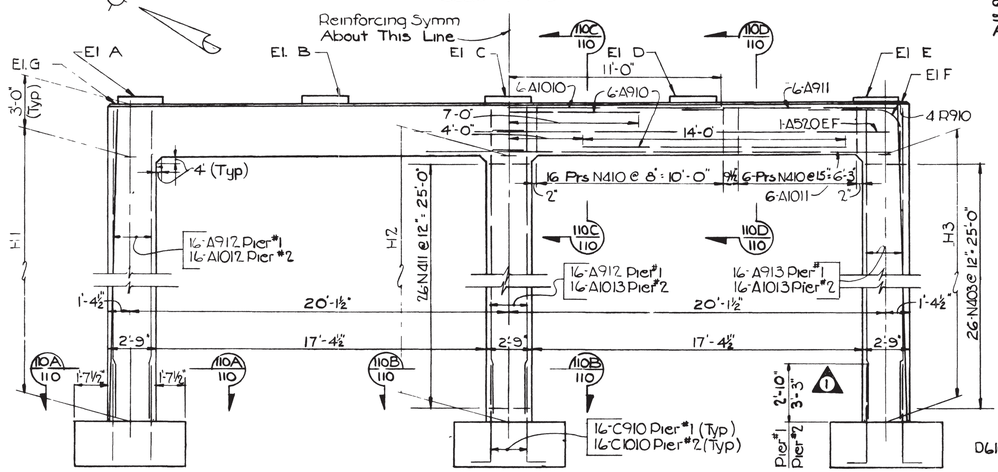
CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-14

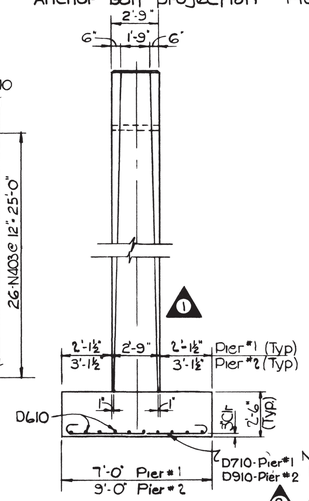
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN.	I-40-3(54)105	1967	110	458



PLAN (W.B.L)
Scale ¼" = 1'-0"



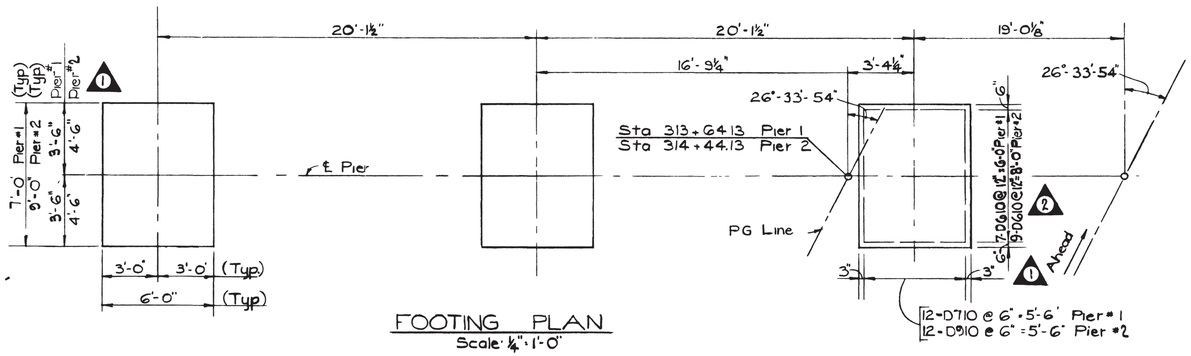
ELEVATION
Scale ¼" = 1'-0"



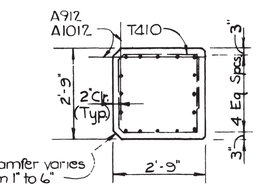
TYP. END ELEVATION
Scale ¼" = 1'-0"

Note:
When pouring bent cap, provisions shall be made for setting anchor bolts for Bearing Plates. If the Contractor elects to drill the holes for the anchor bolts, the reinforcing steel shall be placed so as not to interfere with the drilling. Anchor Bolt projection Pier 1 = 6"; Pier 2 = 4".

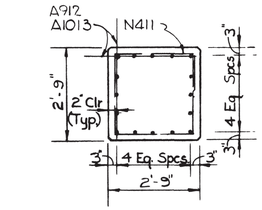
Note
Reinforcing steel to extend a minimum of 1'-11 Pier 1 & 2'-2 Pier 2 into cap beam and shall not be ordered until final footing elevations have been determined.



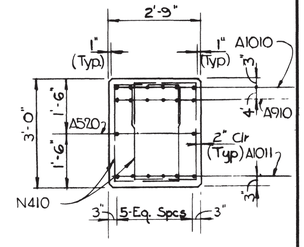
FOOTING PLAN
Scale ¼" = 1'-0"



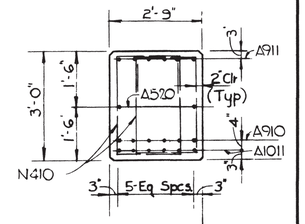
SECTION 110 A
Scale ½" = 1'-0"



SECTION 110 B
Scale: ½" = 1'-0"



SECTION 110 C
Scale. ½" = 1'-0"



SECTION 110 D
Scale ½" = 1'-0"

Note:
Bottom of footing to be a mininum of 6" into rock.

TABLE OF ELEVATIONS									COLUMN HEIGHT		
		A	B	C	D	E	F	G	H1	H2	H3
WBL	Pier 1	541.03	541.24	541.45	541.66	541.87	541.70	540.85	24'-0"	24'-5"	24'-10"
	Pier 2	543.10	543.28	543.46	543.64	543.82	543.65	542.92	23'-0"	23'-4½"	23'-8½"

REVISION
1. 10-20-67 T.R.C. Elev. & Ft Plan; Quantities
2. 5-3-68 R.B.G. Dimension & Bar Identification in footings
3. 6-17-68 D.L.S. Delete E B L

ESTIMATED QUANTITIES			
	①	Concrete Class 'A' Cu. Yds.	Reinforcing Steel Lbs.
WBL	Pier 1	45.2	10,935
	Pier 2	48.5	12,775

SCALE AS NOTED

DESIGNED BY A.A.A. DATE
DRAWN BY A.D.F. DATE
TRACED BY L.W.S. DATE
CHECKED BY J.S.P. & S.P. DATE Aug. 67

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NO. 2 & 2A
I-40 OVER L. & N. RAIL ROAD
DAVIDSON COUNTY
PIERS WBL.

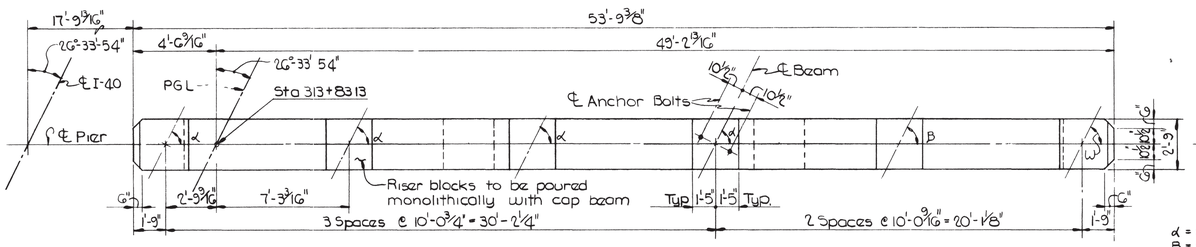
KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

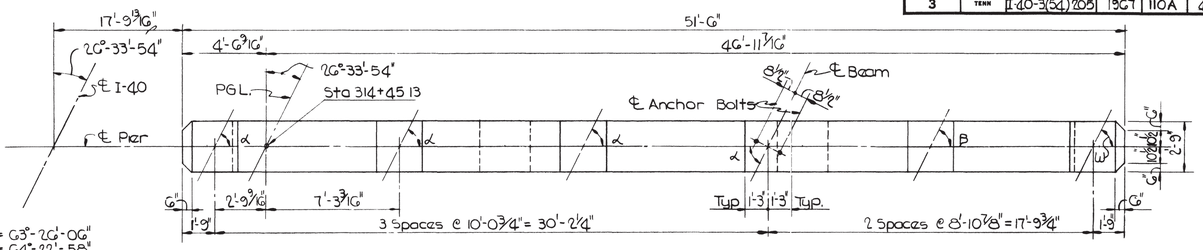
K-66-15

MICROFILMED

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(34)205	1967	110A	458

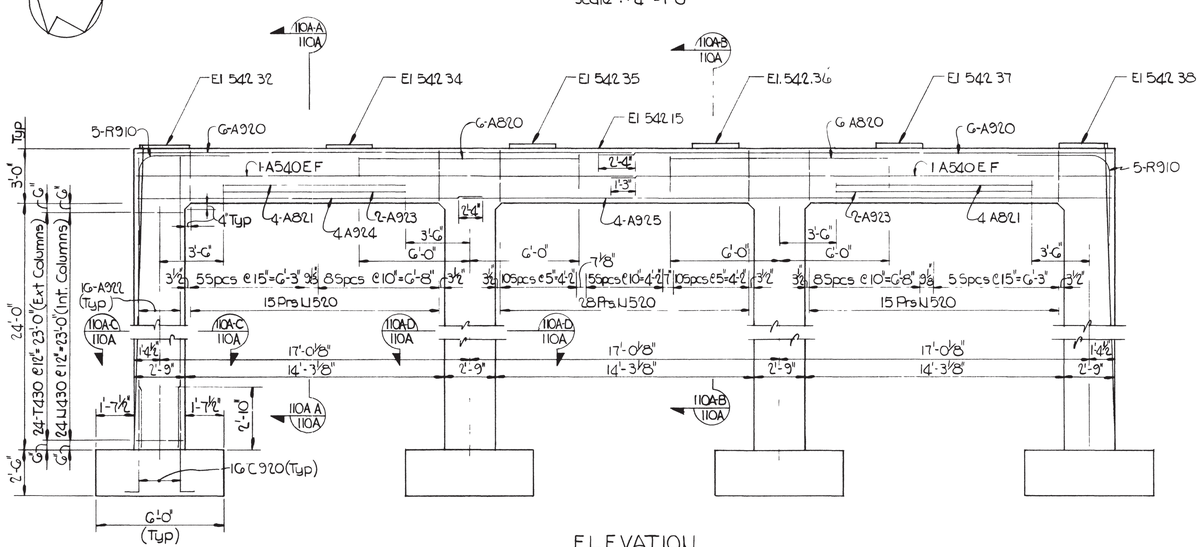


PLAN
Scale : 1/4" = 1'-0"



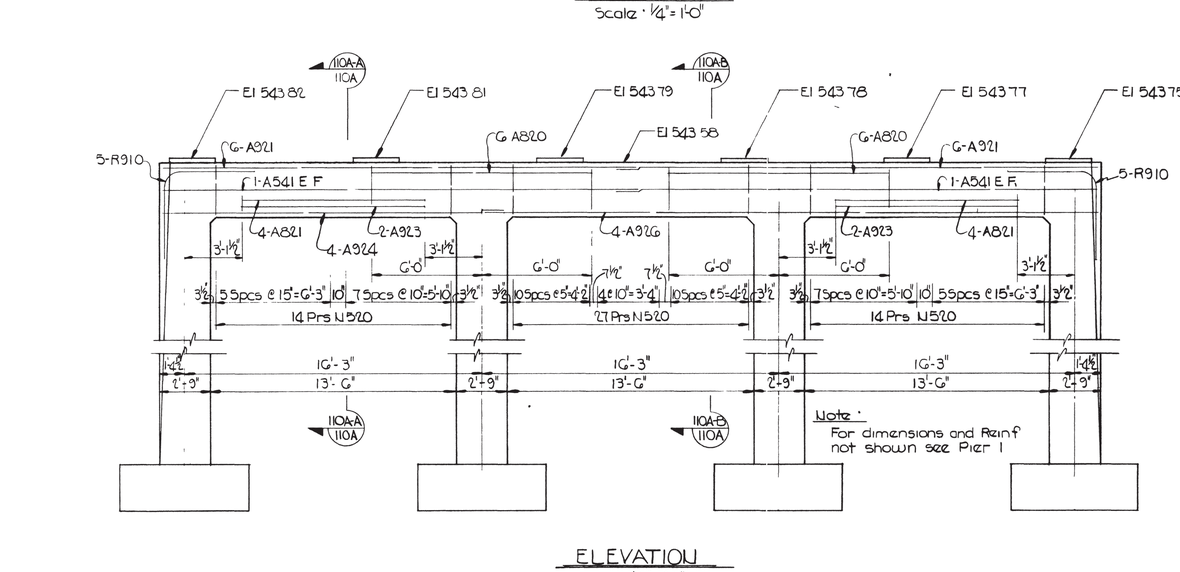
PLAN
Scale : 1/4" = 1'-0"

α = 63°-26'-06"
β = 64°-22'-58"
ω = 65°-20'-44"



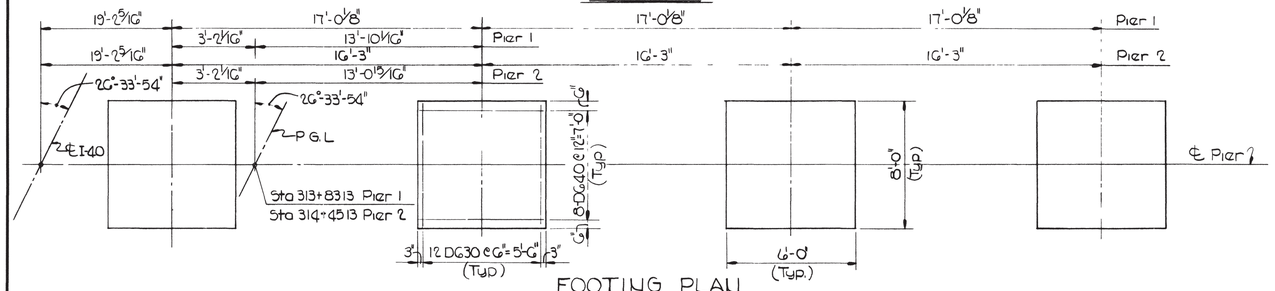
ELEVATION
Scale : 1/4" = 1'-0"

PIER 1

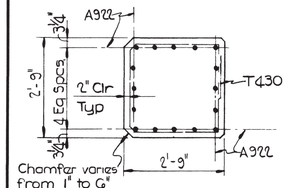


ELEVATION
Scale : 1/4" = 1'-0"

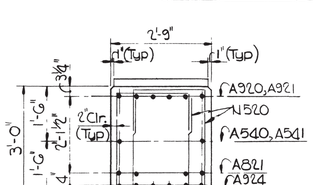
PIER 2



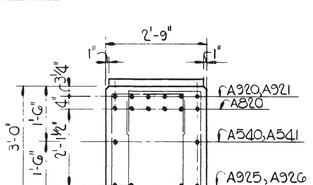
FOOTING PLAN



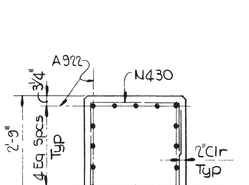
SECTION-110A-C
Scale 1/2" = 1'-0"



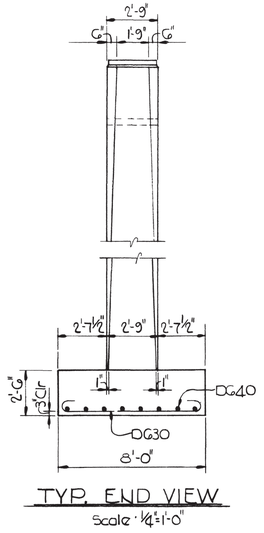
SECTION-110A-A
Scale 1/2" = 1'-0"



SECTION-110A-B
Scale : 1/2" = 1'-0"



SECTION-110A-D
Scale 1/2" = 1'-0"



TYP. END VIEW
Scale : 1/2" = 1'-0"

Notes.

1. When pouring bent cap, provisions shall be made for setting anchor bolts for Bearing Plates if the Contractor elects to drill the holes for the anchor bolts, the reinforcing steel shall be placed so as not to interfere with drilling. Anchor Bolt projection : Pier 1 = 6", Pier 2 = 4"
2. Reinforcing steel to extend a minimum of 1'-11" into cap beam and shall not be ordered until final footing elevations have been determined
3. Bottom of footing to be a minimum of 6" into rock.

ESTIMATED QUANTITIES		
	Concrete Class 'A' Cu Yds	Reinforcing Steel Lbs.
Pier 1	613	12,890
Pier 2	606	12,740

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NO 2 & 2A
I-40 OVER L & N. RAILROAD
DAVIDSON COUNTY
PIERS E B L.

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-15A

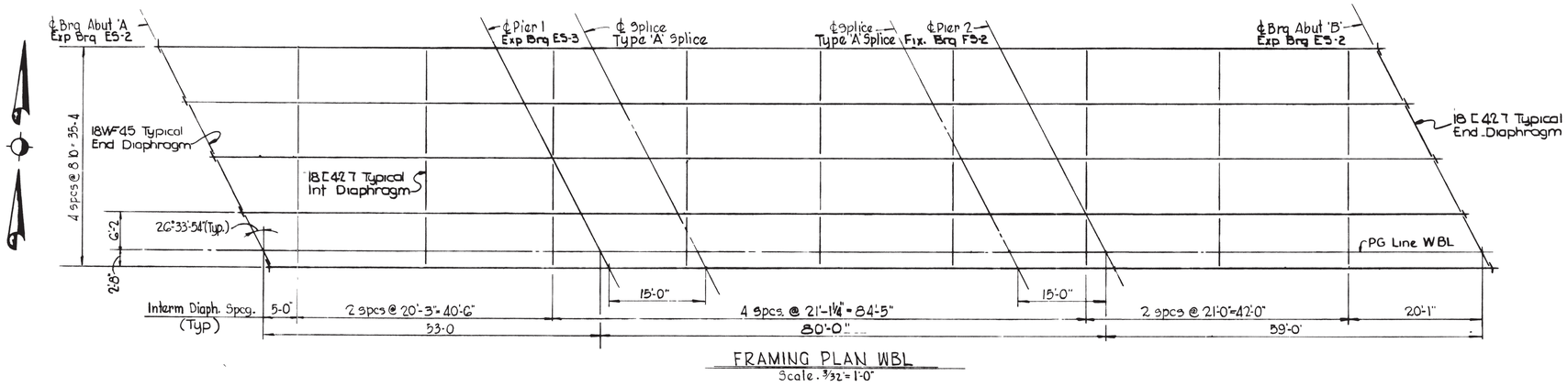
DESIGNED BY PLT DATE JUNE '68
DRAWN BY G.A. DATE JUNE '68
TRACED BY G.A. DATE JUNE '68
CHECKED BY PLT DATE

MICROFILMED

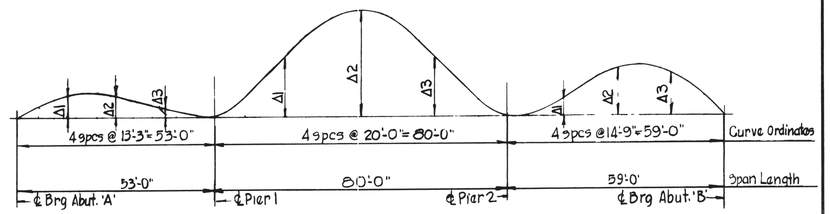
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)208	1967	111	458

REVISION

1. 10-20-67 T.R.C. Brn. Elev. W.B.L.
2. 5-9-68 DWF Drawing No
3. 6-17-68 DLS Delete E B L and Revise Deflection & Camber Schedule W.B.L.

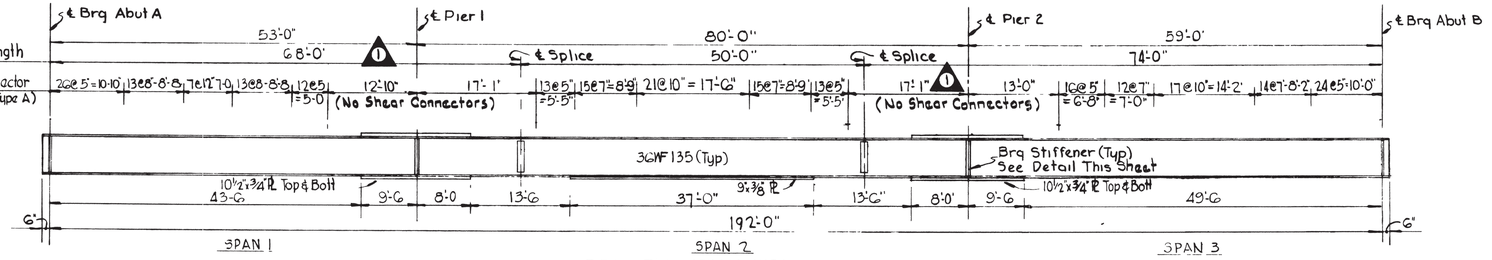


FRAMING PLAN W B L
Scale. 3/32" = 1'-0"



W B. L.

CAMBER DIAGRAM



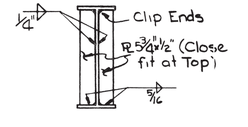
BEAM ELEVATION W B L

Notes
For General Notes See Sh 107
For Shoe Details See Tennessee Std Sh K-38-155
For Expansion Devices See Sh 97
For Beam Splices See Sh 96
For Shear Connector Details See Sh 98 (2)

DEFLECTION & CAMBER

W.B.L (3)

	Span 1			Span 2			Span 3		
	¼ Pt	℄ Pt	¾ Pt	¼ Pt	℄ Pt	¾ Pt	¼ Pt	℄ Pt	¾ Pt
	Δ1	Δ2	Δ3	Δ1	Δ2	Δ3	Δ1	Δ2	Δ3
Deflection due to weight of steel.	0	0	0	1/16"	1/8"	1/16"	0	1/16"	1/16"
Deflection due to remaining DL.	3/16"	3/16"	0	1/2"	3/4"	1/16"	1/8"	3/16"	3/16"
Adjustment req'd for vertical curve	5/16"	3/8"	5/16"	3/8"	1/8"	5/8"	3/8"	1/2"	3/8"
Required shop camber (Total)	1/2"	3/16"	3/16"	1 3/16"	3/4"	1 1/8"	1/2"	7/8"	3/4"



TYPICAL BEARING STIFFENERS AT PIER
No Scale

ESTIMATED QUANTITIES

Structural Steel
Lbs

	WBL
	180,400

DESIGNED BY AAA DATE
DRAWN BY AAA. DATE
TRACED BY N G DATE
CHECKED BY J.S.B DATE

SCALE AS NOTED

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NO. 2 & 2A
I-40 OVER L. & N RAIL ROAD
DAVIDSON COUNTY
FRAMING PLAN AND DETAILS W.B.L.

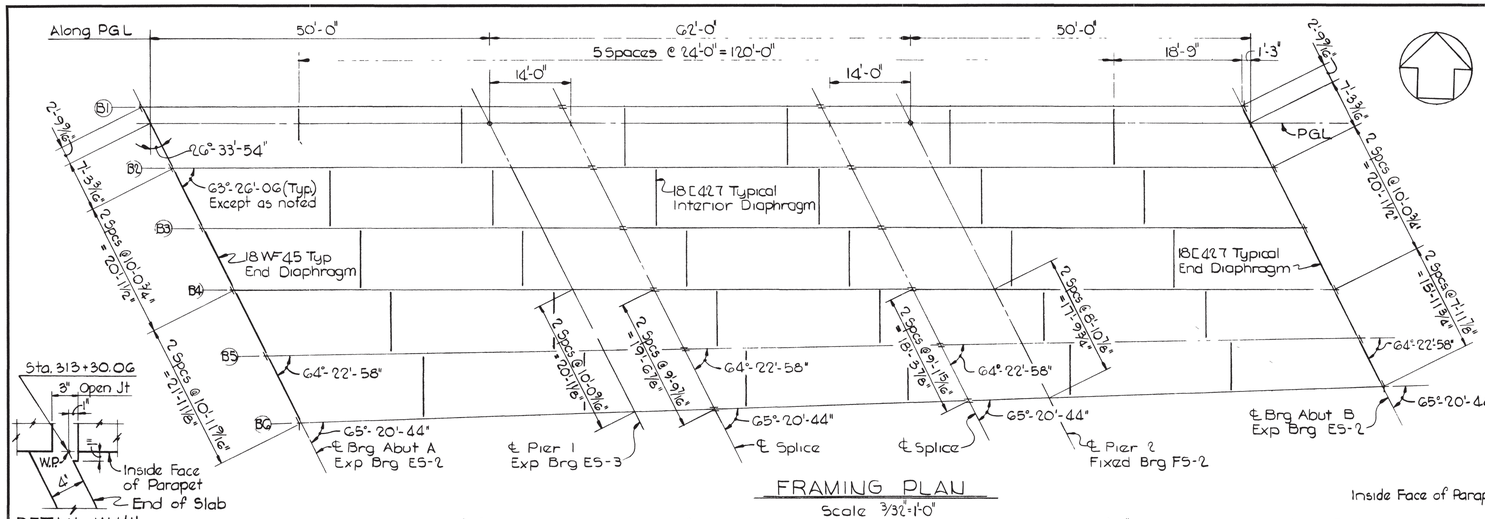
KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

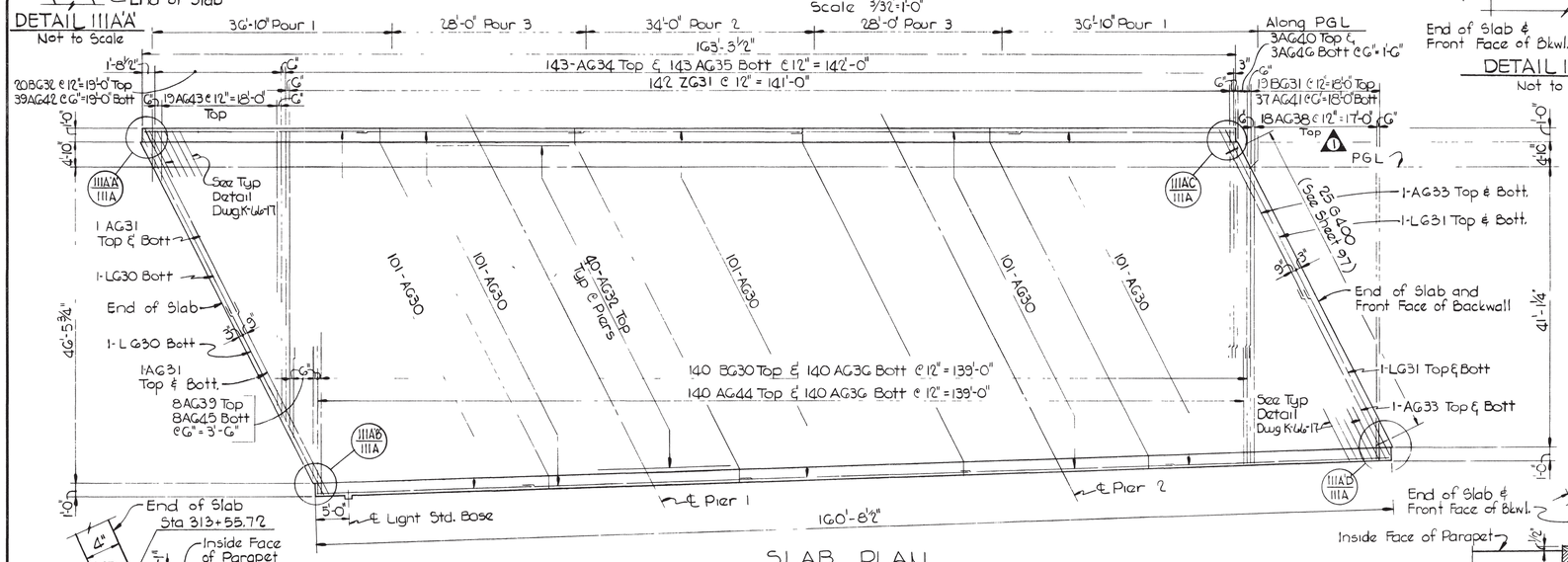
K-66-16

Revision 1 11-27-68 DWF Location of Bars AG38

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	111A	458



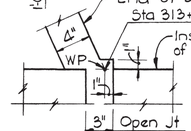
FRAMING PLAN
Scale 3/32"=1'-0"



SLAB PLAN
Scale 3/32"=1'-0"

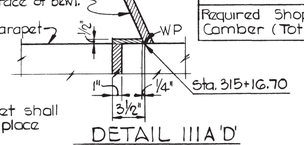
Note: All pours are to be made in numerical sequence. Pours with the same number designation may be made simultaneously.

Note:
The concrete deck shall not be poured until all structural steel is erected and all bolting complete. No portion of the parapet shall be poured until the entire deck slab is in place

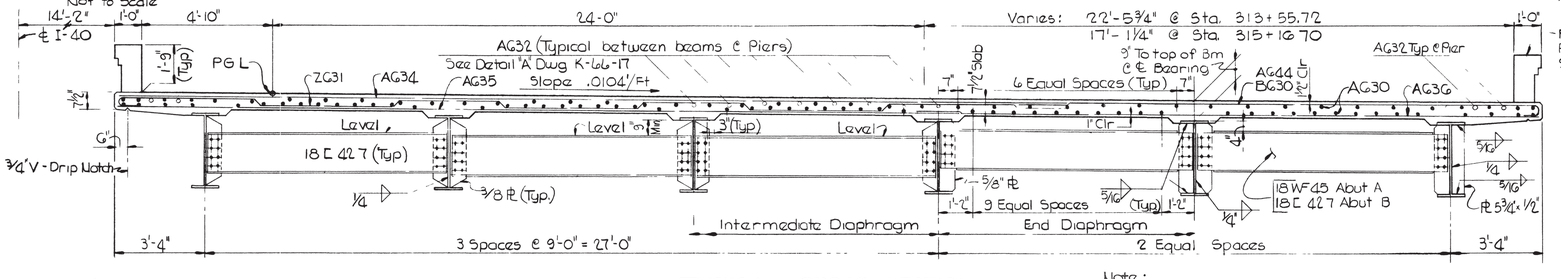


DETAIL IIIA'B'
Not to Scale

Note:
When pouring slab, provisions shall be made for setting reinforcing steel for concrete parapet. See also details on Std Dwg K-38-154

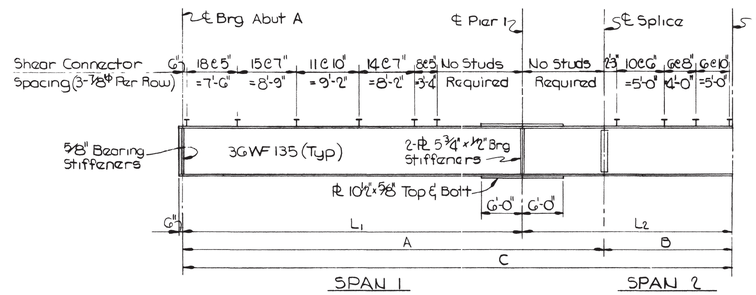


DETAIL IIIA'D'
Not to Scale



TYPICAL CROSS SECTION
Scale 3/8"=1'-0"

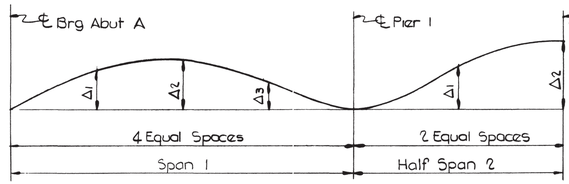
Note:
Field connections shall be ⅞" ϕ high tensile strength Bolts ASTM-A325 unless otherwise shown. See AASHO. specs Art 2.10.20. All field connection are friction type



BEAM ELEVATION
Not to Scale

BEAM SCHEDULE

Beam	L1	L2	A	B	C
B1-B4	50'-0"	31'-0"	64'-0"	17'-0"	81'-0"
B5	49'-7⅛"	30'-9"	63'-5¾"	16'-10⅜"	80'-4⅛"
B6	49'-2½"	30'-6⅛"	62'-11⅞"	16'-8¹³⁄₁₆"	79'-8⅝"



CAMBER DIAGRAM
Not to Scale

DEFLECTIONS & CAMBER

	SPAN 1			SPAN 2			SPAN 3		
	¼ Pt.	½ Pt	¾ Pt.	¼ Pt	½ Pt	¾ Pt	¼ Pt	½ Pt	¾ Pt
	Δ1	Δ2	Δ3	Δ1	Δ2	Δ1	Δ3	Δ2	Δ1
Deflection Due to Weight of Steel	0"	1/16"	0"	0"	1/16"	0"	0"	1/16"	0"
Deflection Due to Remaining Dead Load	¼"	¼"	1/16"	3/16"	5/16"	3/16"	1/16"	¼"	¼"
Adjustment required for Vertical Curve	5/16"	3/8"	5/16"	7/16"	9/16"	7/16"	5/16"	3/8"	5/16"
Required Shop Camber (Total)	9/16"	11/16"	3/8"	5/8"	15/16"	5/8"	3/8"	11/16"	9/16"

Notes
1. For General Notes see Sheet 107
2. For Shoe Details see Tennessee Standard Dwg K-38-155
3. For Typical Standard Steel Details see Sheet 98
4. For Diaphragm Connection Details see Sheet 112
5. For Expansion Device Details see Sheet 97
6. For Beam Splice Details see Sheet 96
7. For Shear Connector Details see Sheet 98
8. For Additional Slab Details see Sheet 112

For Railing and Parapet Details, see Std Dwg K-38-154

ESTIMATED QUANTITIES

Structural Steel Lbs	Concrete Class 'A' Cu Yds.	Reinforcing Steel Lbs
176,280	206.1	73,480

Scale: As Noted

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NO. 2 & 2A
I-40 OVER L & N RAILROAD
DAVIDSON COUNTY
FRAMING AND SLAB PLAN-EBL

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

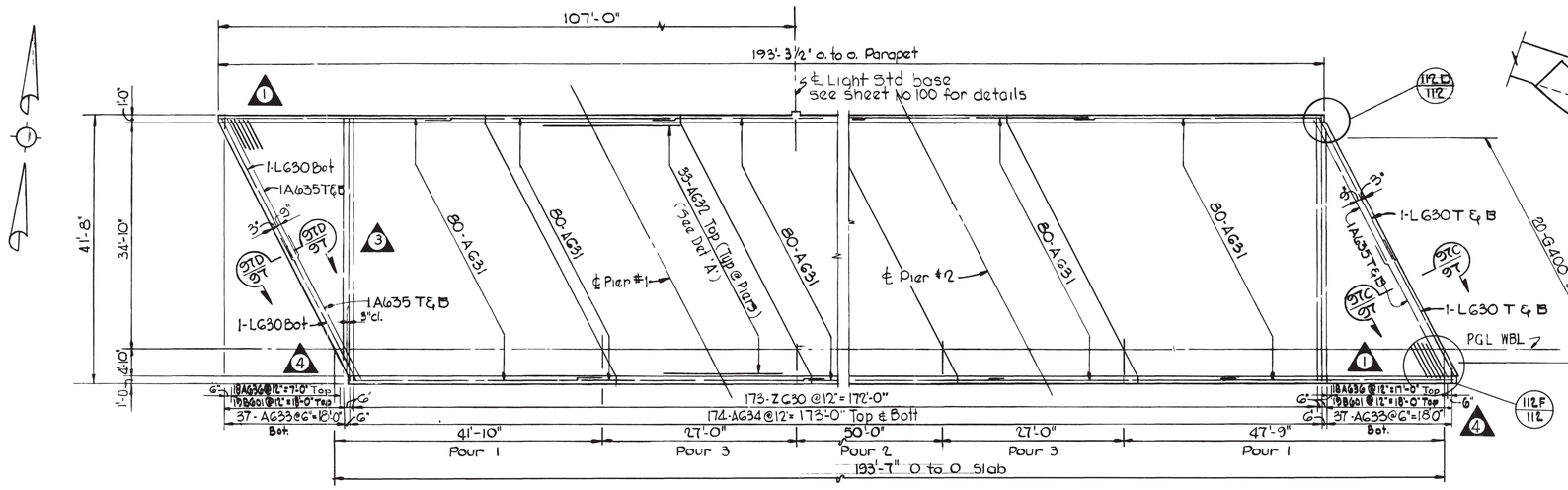
K-66-16A

DESIGNED BY P.L.T. DATE JUNE '68
DRAWN BY G.A. DATE JUNE '68
TRACED BY G.A. DATE JUNE '68
CHECKED BY P.L.T & A.P.S. DATE JULY '68

MICROFILMED

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	112	458

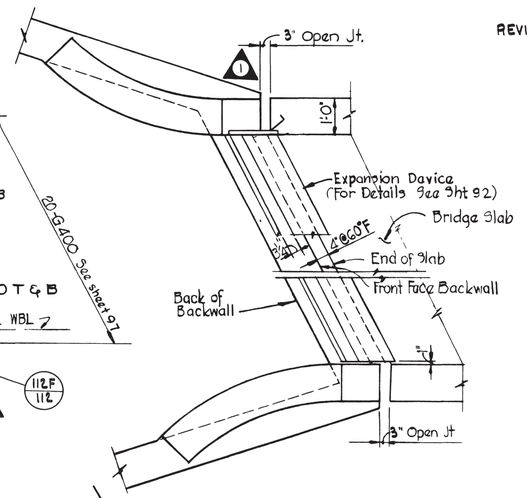
REVISION
1 10-23-67 T.R.C. W.B.L. Plan; Detail "A"; Cross Sect. Quant. Quantities
3 6-17-68 D.L.S. Sect Mark & Delete E.B.L.
4 11-27-68 DWF Location of Bars AG36

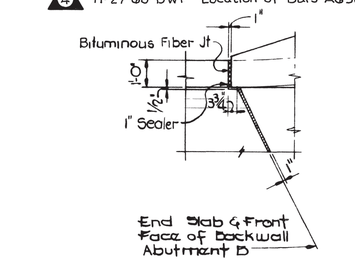


SLAB PLAN-WBL
Scale 3/32"=1'-0"

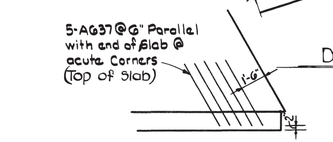
POURING SEQUENCES

All pours to be made in numerical Sequence Pours with the same number designation may be made simultaneously



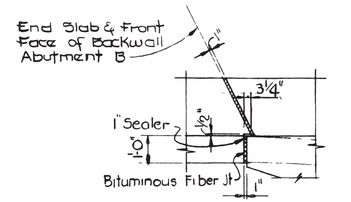


DETAIL 112D
Scale 3/8"=1'-0"

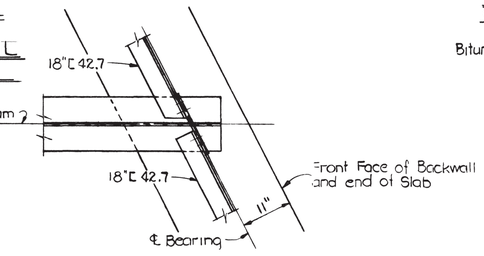


TYPICAL REINF DETAIL AT ACUTE CORNERS
Scale 1/4"=1'-0"

DETAIL AT ABUTMENT 'A'
Scale 1/2"=1'-0"

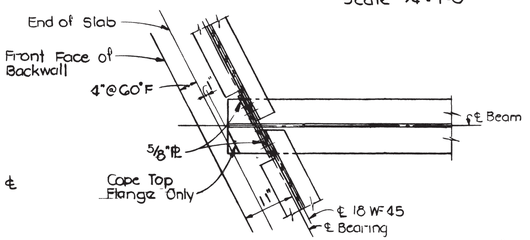


DETAIL 112F
Scale 3/8"=1'-0"



PLAN-END DIAPHRAGM (ABUT. B)
Scale 3/4"=1'-0"

NOTE.
For General Notes See Sheet 107
For Expansion Jt Detail, See Sheet 97
For Shear Connector and Cover Pl. Details See Sheet 98.

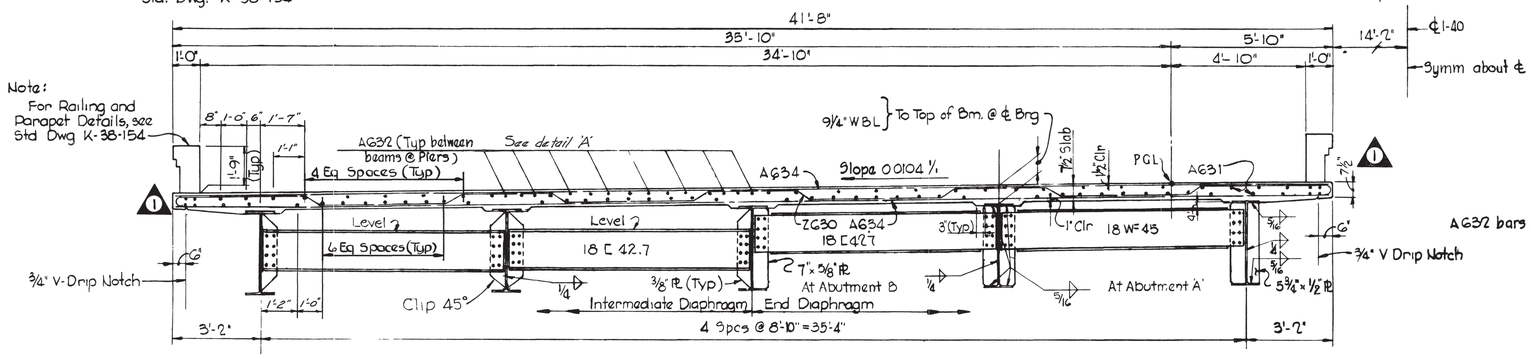


PLAN-END DIAPHRAGM (ABUT A)
Scale 3/4"=1'-0"

ESTIMATED QUANTITIES		
1	Concrete Class 'A' Cu Yds	Reinforcing Steel Lbs
W.B.L.	198.3	64,630

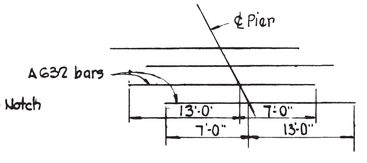
Note: When pouring slab, provisions shall be made for setting reinforcing steel for concrete parapet See also details on Std. Dwg. K-38-154

Note: The concrete deck shall not be poured until all structural steel is erected and all bolting complete. No portion of the parapet shall be poured until the entire deck slab is in place



TYPICAL CROSS SECTION WBL
Scale: ⅜"=1'-0"

NOTE: Field connections shall be 75 ksi high tensile strength. Bolts ASTM-A325 unless otherwise shown. See AASHO specs Art 2.10.20 All field connection are friction type.



DETAIL 'A'

SCALE AS NOTED

DESIGNED BY AAA DATE
DRAWN BY AAA DATE
TRACED BY N.G DATE
CHECKED BY J.S.P. & S.P. DATE Aug 67

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NO. 2 & 2A
I-40 OVER L. & N. RAILROAD
DAVIDSON COUNTY
SLAB PLAN W.B.L.

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-GG-17

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54) 205	1967	113	456

SLABS

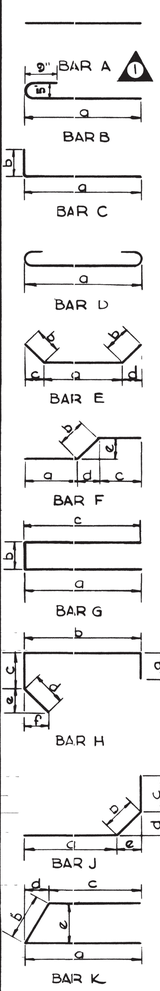
MARK	BAR	NUMBER EBL	NUMBER WBL	SIZE	LENGTH	BENDING DIMENSIONS a	b	c	d	e	f	LOCATION
G400	G		20	4	3'-1"	1'-0	10"	1'-3"				Slab
A631	A		400	6	39'-10"							"
A632	A		66	6	20'-0"							"
A633	A		74	6	3'-9" to 39'-9" (2 Ea VB 12")	1	4					"
A634	A		348	6	41'-4"							"
A635	A		8	6	23'-10"							
L630	L		6	6	23'-9"	22'-11	10"	9"	4½"			Slab
A-636	A		36	6	4'-9" to 38'-9" (2 Ea. VB 2'0)	1				4		
A-637	A		10	6	4'-10"		1	1				
B601	B		38	6	4'-8" to 40'-8" (2 Ea. VB 2'0)	*		1		*	3'-9" to 39'-9"	4
Z630	Z		173	6	44'-6"	41'-4"	1'-8"	5"	4'-8"	3'-4"		Slab
A630	A	505		6	33'-10"							Slab
A631	A	4		6	30'-2"							"
A632	A	80		6	20'-0"							"
A633	A	4		6	27'-0"							"
A634	A	143		6	34'-0"							"
A635	A	143		6	30'-10"							"
A636	A	280		6	18'-0" to 24'-0" (20 Ea VB 4½)							"
A637	A	10		6	4'-10"							"
A638	A	18		6	4'-6" to 40'-6" (1 Ea V B 2'0")							"
A639	A	8		6	12'-0" to 13'-0" (1 Ea. V. B 1'0")							"
A640	A	3		6	28'-0" to 32'-0" (1 Ea V.B. 2'-0")							"
A641	A	31		6	5'-0" to 41'-0" (1 Ea V B 1'0")							"
A642	A	33		6	5'-7" to 42'-0" (1 Ea. V B 11½")							"
A643	A	13		6	6'-5" to 42'-0" (1 Ea V B 1'-11")							"
A644	A	140		6	16'-0" to 21'-0" (10 Ea V B 4½)							"
A645	A	8		6	16'-0" to 23'-0" (1 Ea V.B. 1'0")							"
A646	A	3		6	25'-0" to 29'-0" (1 Ea V B 2'-0")							"
B630	B	140		6	17'-0" to 22'-0" (10 Ea V.B 4½)	16'-1" to 21'-1"						Slab
B631	B	19		6	6'-0" to 42'-0" (1 Ea V.B. 2'0")	35'-1" to 41'-1"						"
B632	B	20		6	16'-6" to 43'-0" (1 Ea V B 1'-0")	39'-1" to 42'-1"						"
L630	L	2		6	30'-3"	23'-5"	10"	9"	4½"			Slab
L631	L	4		6	27'-3"	26'-5"	10"	9"	4½"			"
Z631	Z	142		6	35'-11"	34'-0"	4'-10"	5"	4'-10"	3'-4"		Slab
G400	G	25		4	3'-1"	1'-0"	10"	1'-3"				Slab

ABUTMENTS

MARK	BAR	NUMBER A-EBL	A-WBL	B-EBL	B-WBL	SIZE	LENGTH	BENDING DIMENSIONS a	b	c	d	e	f	LOCATION
A401	A	4	4	4	4	4	5'-6"							Wingwall
A501	A	5	10	5	10	5	24'-4"							Footing
A502	A	5	5	5	5	5	9'-8"							"
A503	A	5	5	5	5	5	10'-6"							"
A504	A	10	20	10	20	5	25'-2"							Backwall
A505	A	16	16	16	16	5	11'-8"							Wingwall
A506	A		-	10	-	5	30'-0"							B.K.W.L.
A507	A	4	4	4	4	5	10'-2"							Wingwall
A508	A	4	4	4	4	5	3'-6"							"
A509	A	40	40	40	40	5	3'-4"							Footing
A510	A	40	24		24	5	3'-8"							Wingwall
A511				40		5	4'-6"							"
A512	A	4	4	4	4	5	3'-1"							Wingwall
A513	A		1		1	5	25'-2"	1						Backwall
A514	A		88		88	5	4'-2"							"
A515	A	114	88	102	88	5	3'-0"							"
A516	A	114		102		5	4'-4"							"
A517				2		5	26'-2"							"
A700	A			9		7	32'-4"							Footing
A701	A	9	18	9	18	7	24'-4"							Footing
A702	A	5	5	5	5	7	9'-8							"
A703	A	5	5	5	5	7	10'-6"							"
A704	A	9	-	-	-	7	39'-0"							"
G401	G	12	12	12	12	4	4'-4"	1'-10"	8"					Wingwall
G402	G	12	12	12	12	4	6'-0"	2'-8"	8"					"
H501	H	57	46	52	46	5	5'-0"	6"	1'-8"	6"	2'-4"	1'-8"	1'-8"	Backwall
J501	J	4	4	4	4	5'	7'-5"	1'-7"	3'-0"	2'-10"	9"	2'-10"		Wingwall
L501	L	4	4	4	4	5	3'-10"	2'-0"	1'-10"	7"	1'-9			Wingwall
E501	E	4	4	4	4	5	3'-6"	1'-0"	1'-3	1'-1"	6"			Wingwall
N501	N	57	47	57	47	5	10'-4"	2'-7"	2'-1"	1'-0"				Footing
N502	N	18	18	18	18	5	9'-4"	2'-1"	2'-1"	1'-0"				"
A518	A	-	-	5	-	5	31'-10"							Footing
A519	A	10	-	-	-	5	38'-0"							Backwall
A520	A	2	-	-	-	5	31'-8"							"
A521	A	3	-	-	-	5	38'-6"							Footing

PIERS

MARK	BAR	NUMBER 1EBL	2EBL	1WBL	2WBL	SIZE	LENGTH	BENDING DIMENSIONS a	b	c	d	e	f	LOCATION
A520	A			4	4	5	21'-11"					1		Cap
A910	A			18	18	9	14'-0"							Cap
A911	A			12	12	9	12'-6"							"
A912	A			32		9	26'-6"							Column
A913	A			16		9	27'-4"							"
A1010	A			6	6	10	22'-0"							Cap
A1011	A			12	12	10	22'-2"							"
A1012	A				16	10	25'-7"							Column
A1013	A				32	10	26'-0"							"
C910	C			48		9	5'-8"	5'-1"	7"				1	Footing
C1010	C				48	10	6'-2"	5'-6"	8"				1	Footing
D610	D			21	27	6	6'-10"	5'-6"				2	1	Footing
D710	D			36		7	8'-2"	6'-6"						
D910	D				36	9	11'-0"	8'-6"					1	Footing
N410	N			88	88	4	10'-2"	2'-8"	1'-11"	1'-0"				Cap
N411	N			24	24	4	10'-8	2'-5	2'-5"	1'-0"				Column
R910	R			8	8	9	11'-2"	4'-0"	3'-2	4'-0"	2'-0"			Cap
T410	T			49	47	4	10'-4"	2'-5	1'-9"	6"	2'-1"	1'-0"	4"	Column
A540	A	4				5	27'-4"							Cap
A541	A		4			5	26'-3"							"
A820	A	12		12		8	12'-0"							Cap
A821	A	8		8		8	10'-0"							"
A920	A	12				9	27'-10"							Cap
A921	A			12		9	26'-8"							"
A922	A	64		64		9	25'-11"							Column
A923	A	4		4		9	10'-0"							Cap
A924	A	4		4		9	19'-0"							"
A925	A	4				9	36'-8"							"
A926	A			4		9	34'-3"							"
C920	C	64		64		9	5'-8"	5'-1"	7"					Footing
D630	D	48		48		6	9'-0"	7'-8"						Footing
D640	D	32		32		6	7'-0"	5'-8"						Footing
W430	W	48		48		4	10'-8"	2'-5"	2'-5"	1'-0"				Column
N520	N	116		110		5	10'-2 3/4"	1'-10 3/8	2'-8"	1'-1"				Cap
R910	R	10		10		9	11'-2"	4'-0"	3'-2"	4'-0"	2'-0"			Cap
T430	T	48		48		4	10'-4"	2'-5"	1'-9"	6"	2'-1"	1'-0"	4"	Column



REVISION

1. 10-28-67 T.R.C. Slab; Abut.; Piers
2. 5-3-68 R.B.G. Bar D710
3. 6-17-68 D.L.S. E.B.L. Revision
4. 11-27-68 DWF Bars AG33, AG36 & B601

NOTES.

1. Reinforcing steel detailed as per Manual of Standard Practice for Reinforced Concrete Structures A.C.I.
2. Standard Hooks as recommended by CRSI shall apply unless otherwise noted.
3. Bar dimensions are out to out.

DESIGNED BY AAA DATE
DRAWN BY AAA DATE
TRACED BY L.M.S. DATE
CHECKED BY J.S.P. & S.P. DATE Aug 67

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURE NC 2 & 2A
I-40 OVER L & N. RAILROAD
DAVIDSON COUNTY
REINFORCING STEEL SCHEDULE

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-18

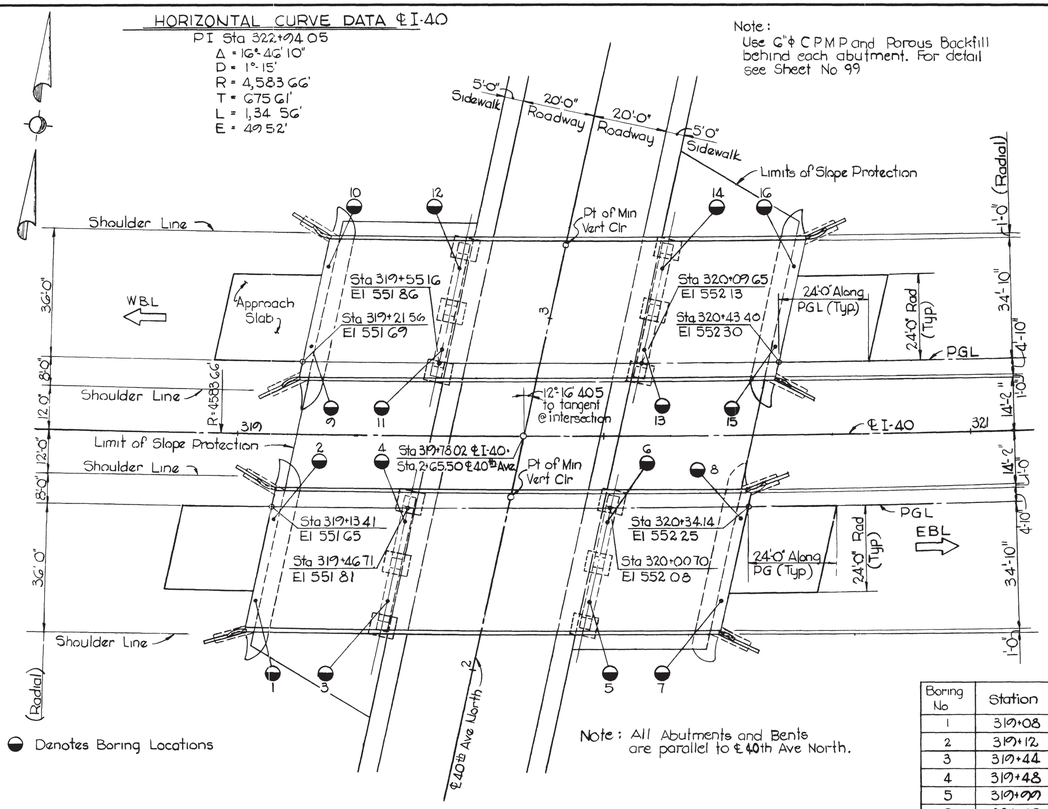
REVISION
1 10-19-67 W.O.D. Quantities, Steel Railing, Conc. & Lighting Notes.
2 10-16-68 D W F Reinf Steel Quantities

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)105	1967	114	458

HORIZONTAL CURVE DATA ℄ I-40

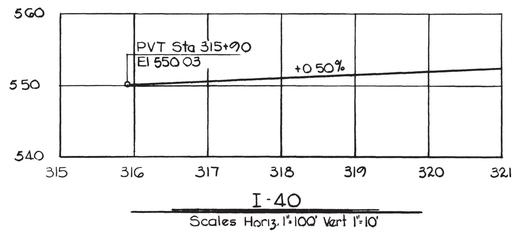
PI Sta 322+94.05
Δ = 16° 46' 10"
D = 1° 15'
R = 4,583.66'
T = 675.61'
L = 1,345.26'
E = 49.52'

Note: Use 6"ϕ C.P.M.P. and Porous Backfill behind each abutment. For detail see Sheet No 99

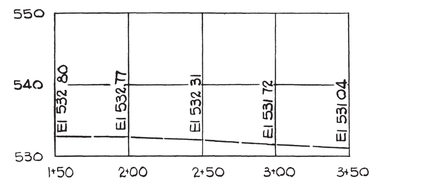


PLAN
Scale 1" = 20'

Note: All Abutments and Bents are parallel to ℄ 40th Ave North.



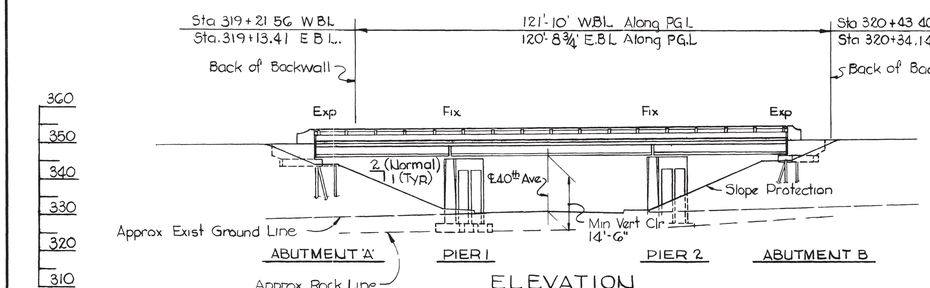
I-40
Scales Horiz. 1"=100' Vert 1"=10'



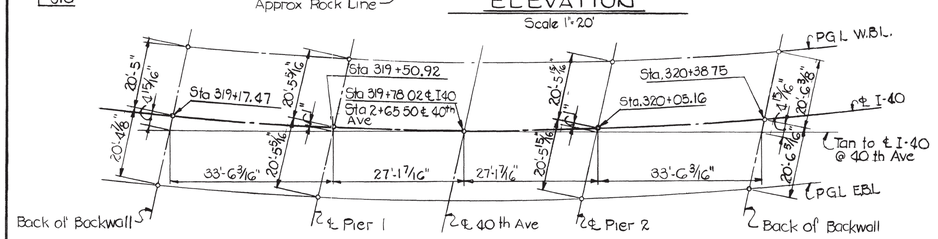
EXISTING 40TH AVE. NORTH
Scales Horiz 1"=50' Vert 1"=10'

Boring No	Station	Offset	Ground Elev	Rock Elev.
1	319+08	47' Rt	528.5	522.5
2	319+12	24'-Rt	528.5	524.5
3	319+44	47' Rt	530.7	527.7
4	319+48	24'-Rt	530.3	520.8
5	319+80	47'-Rt	532.9	526.9
6	320+03	24'-Rt	532.8	526.8
7	320+35	47'-Rt.	533.6	528.6
8	320+39	24'-Rt	533.5	528.5
9	319+17	24'-Lt	528.1	524.1
10	319+21	47' Lt	528.2	523.2
11	319+53	24'-Lt	530.1	525.1
12	319+57	47' Lt	530.1	528.1
13	320+08	24'-Lt	532.7	527.7
14	320+12	47' Lt	532.4	527.4
15	320+44	24'-Lt	533.5	530.5
16	320+48	47'-Lt	533.0	529.0

Cost of all joint Material to be included in the price bid for Class 'A' Concrete.
Cost of 6"ϕ C.P.M.P. and porous backfill material to be included in price of items bid on
* Special Provision on Linseed Oil Treatment does not apply to Bent Caps.
Excavation based on lower road profile.
** Cast in Place
1 Lighting Lump Sum is for complete installation of all Structural Lighting as shown on plans



ELEVATION
Scale 1"=20'



LAYOUT SKETCH
Not to Scale

DESIGNED BY A.A.A. DATE
DRAWN BY R.J.H. DATE 5-27-65
TRACED BY R.J.H. DATE
CHECKED BY J.S.D. & C.M. DATE Sept. 67

GENERAL NOTES

SPECIFICATIONS
General - Tennessee Department of Highways, "Road and Bridge Specifications, 1951 Edition, and the Supplemental Specifications and Special Provisions"
Design - AASHO Standard Specifications for Highway Bridges, 1965 Edition.
Capacity - H S 20-44 Loading and the BPR modified loading for military vehicles

CONCRETE
All cast-in place concrete shall be Class "A". Chamfer all exposed edges of concrete 1"×1" unless otherwise shown or noted

REINFORCEMENT
All reinforcing steel shall be intermediate or hard grade
All reinforcing bar dimensions on the detail drawings are to centerline of bar except where the clear distance is noted from face of concrete.

JOINT SEALER:
See Special Provisions, Class A or B

NEOPRENE BEARING PADS:
See Special Provisions.

PILES.
All piles shall be 10 BP 42 and driven to refusal or a minimum bearing of 40 tons.

FOUNDATIONS:
The foundations of Abutments shall be on piles
The footings of Piers shall rest on rock
When foundation for Piers have been uncovered, holes 6 feet deep shall be drilled into the rock at points designated by the Engineer.
No reinforcing steel shall be ordered until final footing elevations are determined

BRIDGE RAILING: Build Bridge railing according to Std Dwg K-38-154

1 (WBL) N Par x' = 1'-3 7/8", N-12 Spc @ L = 9'-9"
(WBL) S Par x' = 1'-3 1/2", N=12 Spc @ L = 9'-9"
(EBL) N Par x' = 1'-3 7/8", N=12 Spc @ L = 9'-9"
(EBL) S Par x' = 1'-3", N=12 Spc @ L = 9'-9"
(Typical for Alum. & Steel Bridge railing)

FILLS:
Fills at ends of bridge to be in place and thoroughly compacted before Abutment Piles are driven

INDEX OF DRAWINGS

Sheet No.	Title
114	General Plan and Elevation
115	Abutment 'A' EBL and WBL
116	Abutment 'B' EBL and WBL
117	Abutment Details
118	Piers and Details
119	Superstructure and Details
120	Prestressed Beams and Details
121	Reinforcing Steel Schedule
99	Standard Abutment & Retaining Wall Details
254	Bridge Railing K-38-154

LIGHTING:
For underpass lighting details see Sheet No 91

ESTIMATED QUANTITIES 1 2

		Excavation Dry C.Y.	Excavation Rock C.Y.	Concrete Class 'A' C.Y.	Reinforcing Steel Lbs	Type II Prest. Beams 37'-0 3/8" long Ea.	Type II Prest. Beams 37'-2" long Ea.	Type II Prest. Beams 53'-5 3/4" long Ea.	Bearing Piles 10 BP 42 L.F.	Bridge Railing L.F.	*Linseed Oil Treatment S.Y.	Rock Drilling L.F.	Structure Lighting L.S.
E.B.L.	Superstructure			131.1	43,751	5	5	5		239'	600		
	Abutment 'A'			19.9	2,850				185		30		
	Pier 1	62	6	33.2	5,710							18	
	Pier 2	60	4	33.2	5,710							18	
	Abutment 'B'			19.9	2,850				145		30		
W.B.L.	Superstructure			132.1	45,419	5	5	5		239'	600		
	Abutment 'A'			19.9	2,850				180		30		
	Pier 1	35	3	33.2	5,710							18	
	Pier 2	51	9	33.2	5,710							18	
	Abutment 'B'			19.9	2,850				145		30		
	Total	208	22	475.5	123,410	10	10	10	655	478'	1,320	72	Lump Sum

SCALE: AS NOTED

ROADWAY
2-39'-8" Roadways

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO. 3 & 3A
I-40 OVER 40TH AVENUE
DAVIDSON COUNTY
GENERAL PLAN & ELEVATION

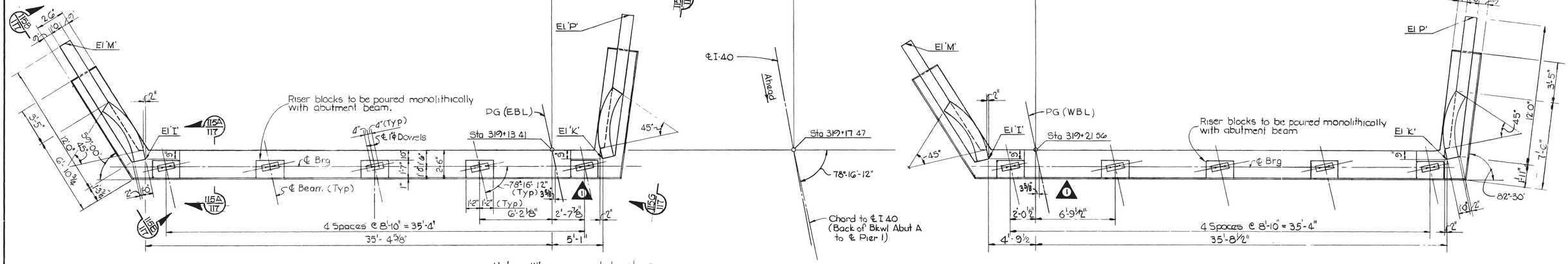
KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD.

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-19

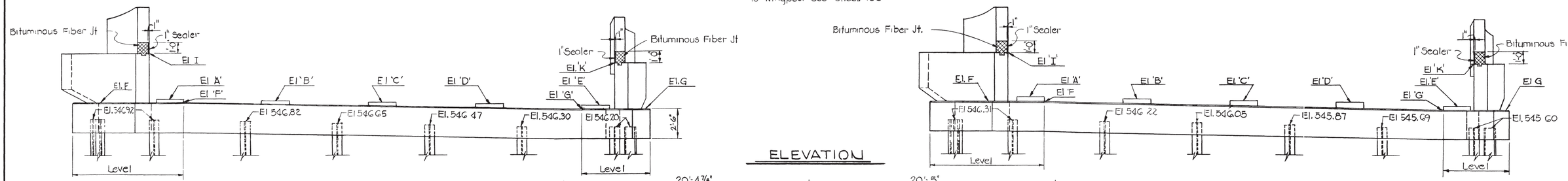
REVISION 1 10-19-67 W.O.D. Abut. Dimn.

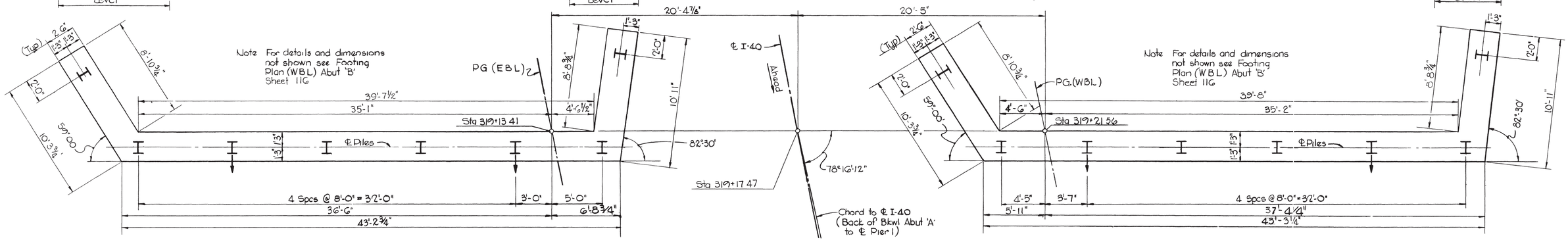
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)105	1967	115	458



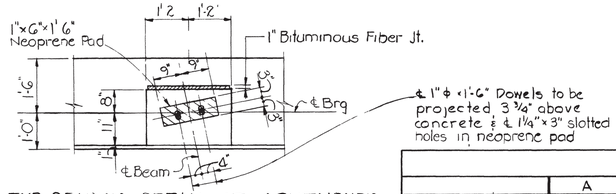
Note: When pouring abutment caps, provisions shall be made for setting dowel bars for prestressed beam Bar Projection = 3⅜"

Note For detail of Guardrail attachment to wingpost see Sheet 100





FOOTING PLANS



TYP BEARING DETAIL AT ABUTMENTS

Scale ½"=1'-0"

		TABLE OF ELEVATIONS										
		A	B	C	D	E	F	G	I	K	M	P
EBL	Abutment 'A'	548.59	548.41	548 23	548 05	547.87	548 42	547 70	552 40	551.54	552.36	551.52
WBL	Abutment 'A'	547.98	547 80	547.62	547.44	547 27	547 81	547 10	551.80	550 98	551.75	550 93

ESTIMATED QUANTITIES		
	Concrete Class 'A' Cu Yds	Reinforcing Steel Lbs.
Abutment 'A' EBL	19.9	2,850
Abutment 'A' WBL	19.9	2,850

SCALE · ¼"=1'-0"

DESIGNED BY A A A DATE
DRAWN BY R J H DATE 5-27-65
TRACED BY B J H DATE
CHECKED BY J. S. D & C.M. DATE Sept 67

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO. 3 & 3A I-40 OVER 40TH AVENUE DAVIDSON COUNTY ABUTMENT 'A' EBL & WBL

KNOERLE, BENDER, STONE & ASSOCIATES, INC
NASHVILLE, TENN BALTIMORE, MD

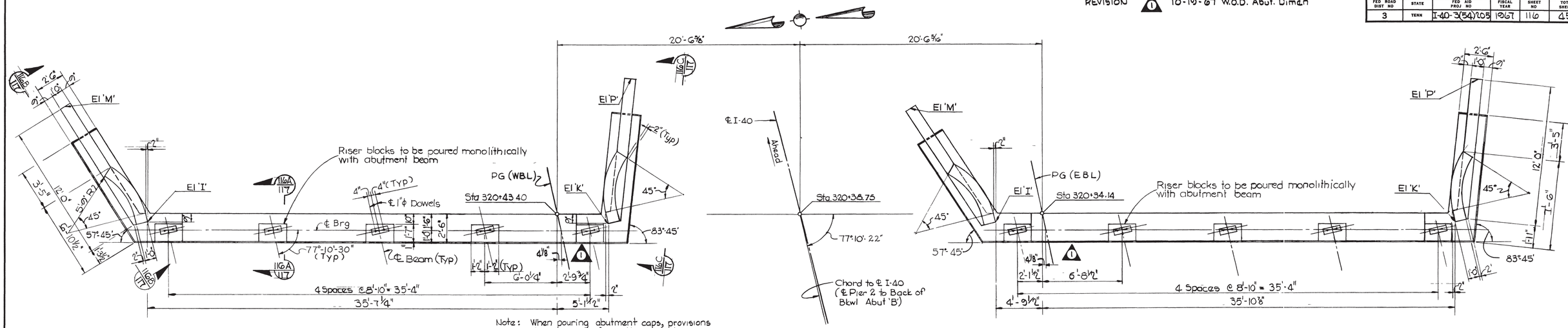
CORRECT _____ BRIDGE ENGINEER

APPROVED _____ STATE HIGHWAY ENGINEER

K-66 20

REVISION 1 10-19-67 W.O.D. Abut. Dimen

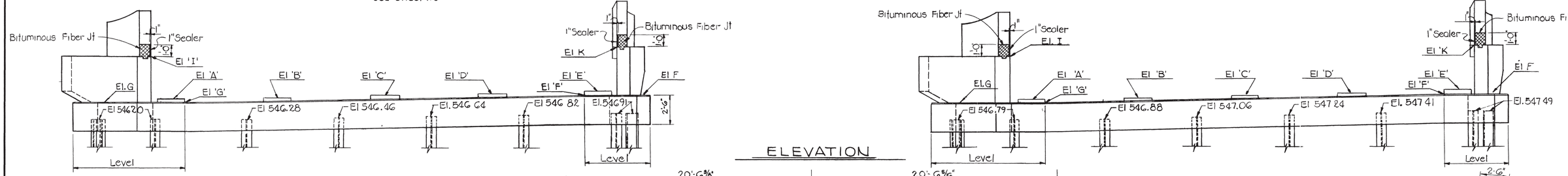
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	116	458



Note: When pouring abutment caps, provisions shall be made for setting dowel bars for prestressed beam Bar Projection 3¾"

Note For typ bearing details See Sheet 115

Note: For detail of Guardrail attachment to Wingpost see Sheet 100.



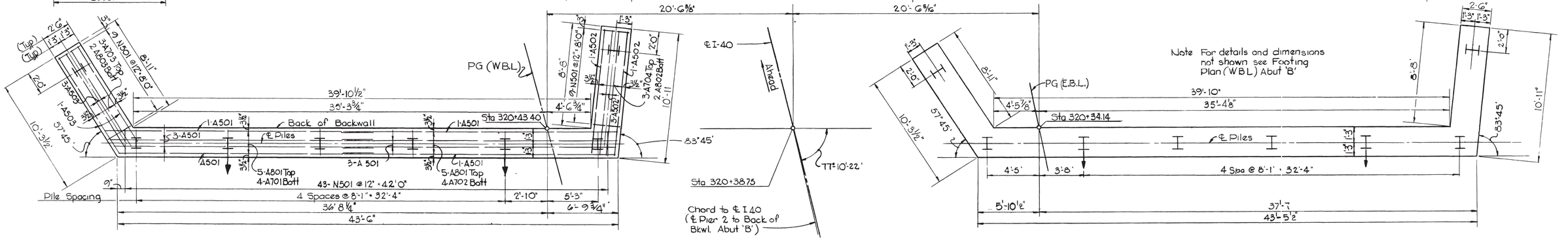


TABLE OF ELEVATIONS

		A	B	C	D	E	F	G	I	K	M	P
WBL	Abutment 'B'	547 87	548 05	548.22	548 40	548.58	548 41	547.70	551.54	552.40	551.64	552.45
EBL	Abutment 'B'	548 46	548 63	548.81	548 99	549 16	548.99	548 29	552 14	552 99	552.23	553 03

ESTIMATED QUANTITIES

	Concrete Class 'A' Cu Yds	Reinforcing Steel Lbs
Abutment 'B' EBL	19.9	2,850
Abutment 'B' WBL	19.9	2,850

SCALE: 1/4" = 1'-0"

DESIGNED BY A.A.A. DATE
DRAWN BY R.J.H. DATE 5-27-65
TRACED BY R.J.H. DATE
CHECKED BY J.S.P. & C.M. DATE Sept 67

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

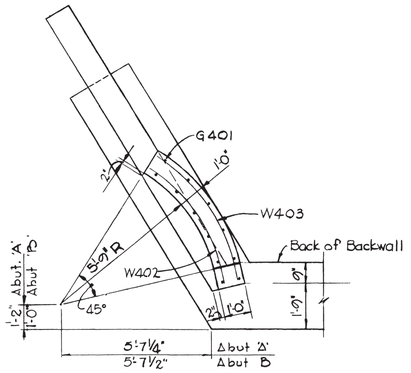
STRUCTURES NO. 3 & 3A I-40 OVER 40TH AVENUE DAVIDSON COUNTY ABUTMENT 'B' E.B.L. & W.B.L

KNOERLE, BENDER, STONE & ASSOCIATES, INC
NASHVILLE, TENN BALTIMORE, MD

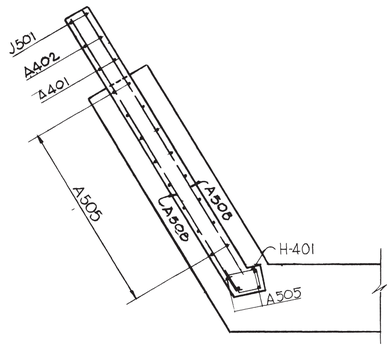
CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-21

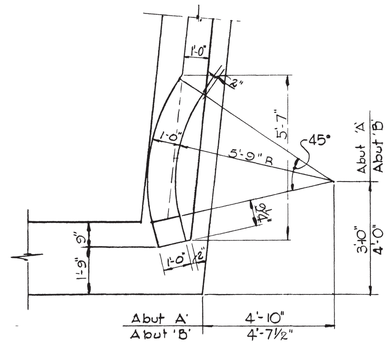
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	117	458



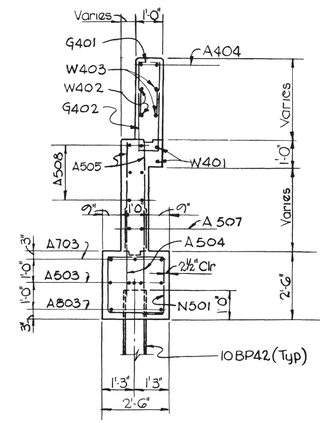
SECTION 117B
Scale ⅜"=1'-0"



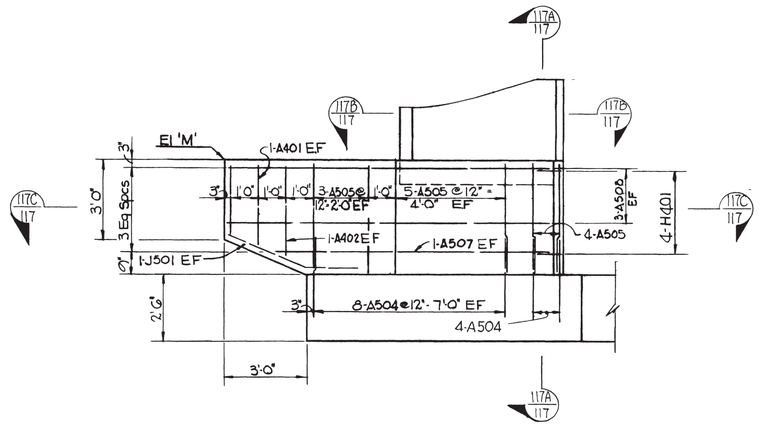
VIEW 116
Scale ⅜"=1'0"



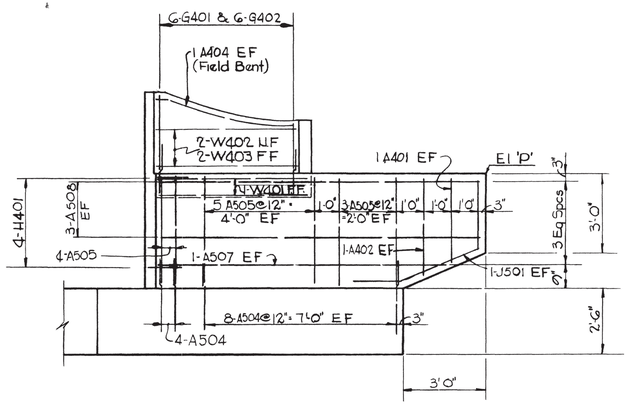
TYPICAL WINGPOST DETAIL
Scale ⅜"=1'-0"



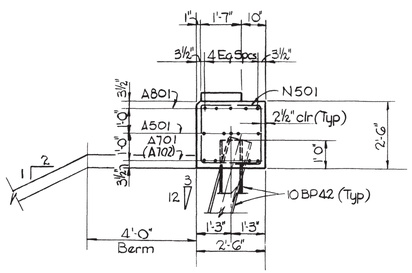
SECTION 117A
Scale ⅜"=1'-0"



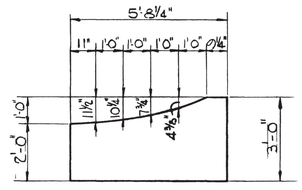
VIEW 116B
Scale ⅜"=1'0"
View 115B Similar



VIEW 116C
Scale ⅜"=1'-0"
View 115C Similar



SECTION 116A
Scale ⅜"=1'-0"
View 115A Similar



DEVELOPED WINGPOST (ALONG ℄)
Scale ⅜"=1'-0"

Note: For drains in back of Abutment see Sheet 99

DESIGNED BY A.A.A. DATE
DRAWN BY R.J.H. DATE 5-27-65
TRACED BY R.J.H. DATE
CHECKED BY J.S.P. & C.M. DATE Sept. 67

SCALE: AS NOTED

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO. 3 & 3A
I-40 OVER 40TH AVENUE
DAVIDSON COUNTY
ABUTMENT DETAILS

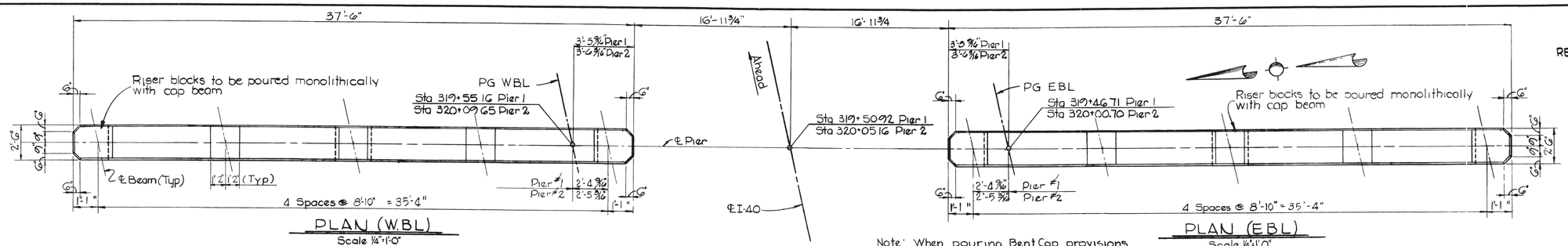
KNOERLE, BENDER, STONE & ASSOCIATES, INC
NASHVILLE, TENN BALTIMORE, MD

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-22

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)108	1967	118	458

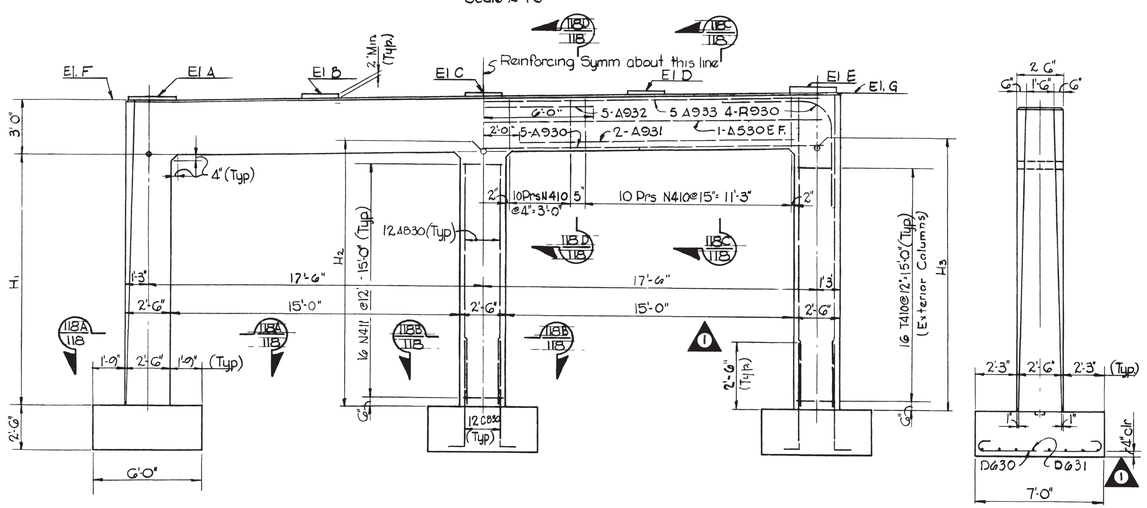
REVISION 1 10-19-67 W.O.D. Footing Reinf & Quantities



PLAN (W.B.L)
Scale 1/4"=1'-0"

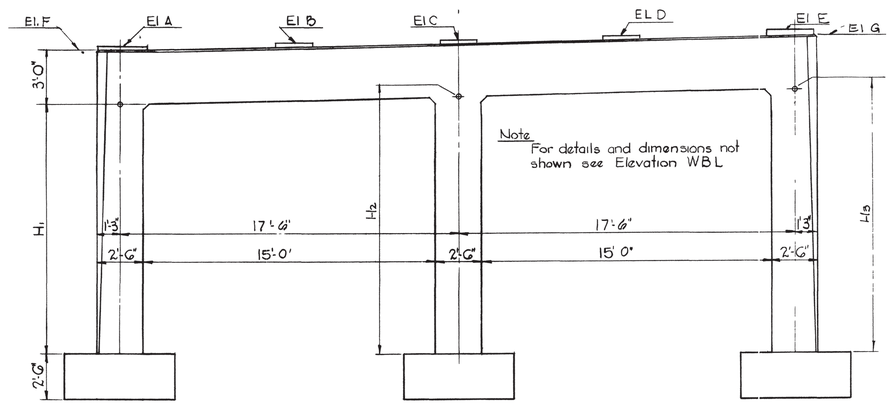
PLAN (E.B.L)
Scale 1/4"=1'0"

Note: When pouring Bent Cap, provisions shall be made for setting Dowel Bars Bar Projection 6 3/4"

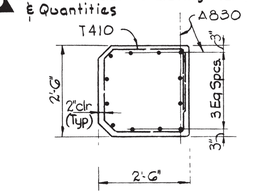


ELEVATION (W.B.L)
Scale 1/4"=1'-0"

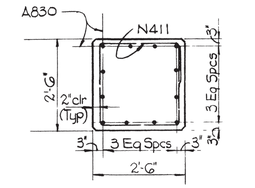
END ELEVATION
Scale 1/4"=1'-0"



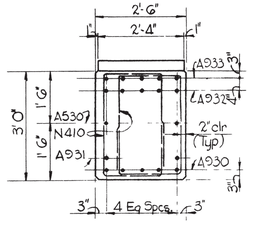
ELEVATION (E.B.L)
Scale 1/4"=1'-0"



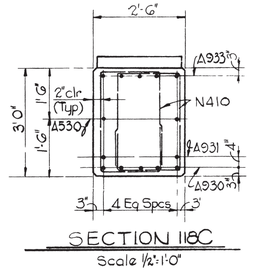
SECTION 118A
Scale 1/2"=1'-0"



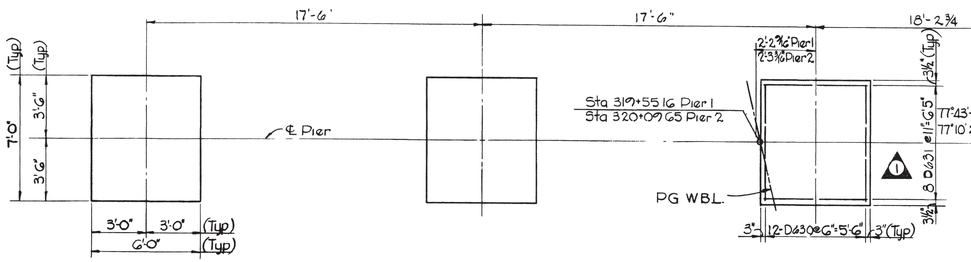
SECTION 118B
Scale 1/2"=1'-0"



SECTION 118D
Scale 1/2"=1'-0"



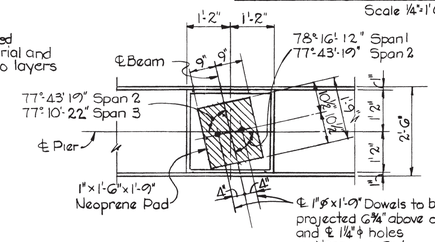
SECTION 118C
Scale 1/2"=1'-0"



FOOTING PLAN (W.B.L.)
Scale 1/4"=1'-0"

FOOTING PLAN (E.B.L)
Scale 1/4"=1'0"

Note.
Top of dowels to be covered with 1/2" compressive material and projection wrapped with two layers of waterproof paper.



TYPICAL BEARING DETAIL
Scale 1/2"=1'-0"

TABLE OF ELEVATIONS									COLUMN HEIGHT		
		F	A	B	C	D	E	G	H_1	H_2	H_3
WBL	Pier 1	547 23	547 43	547 61	547 78	547.96	548.14	547.97	15'-6"	15'-10"	16'-2"
	Pier 2	547 50	547 70	547 88	548 06	548 24	548 41	548.24	15'-6"	15'-10"	16'-2"
EBL	Pier 1	547 83	548 03	548 20	548 38	548 56	548.74	548 57	15'-6"	15'-10"	16'-2"
	Pier 2	548 10	548 30	548 47	548 65	548.83	549 01	548 84	15'-6"	15'-10"	16'-2"

ESTIMATED QUANTITIES			
1		Concrete Class 'A' Cu Yds	Reinforcing Steel Lbs.
WBL	Pier 1	33 2	5,710
	Pier 2	33 2	5,710
EBL	Pier 1	33 2	5,710
	Pier 2	33 2	5,710

SCALE: AS NOTED

Notes:
Reinforcing steel to extend a minimum of 1'-8" into cap beam and shall not be ordered until final footing elevations have been determined

Bottom of footing to be a minimum of 6 into rock.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO. 3 & 3A I-40 OVER 40TH AVENUE DAVIDSON COUNTY PIERS AND DETAILS

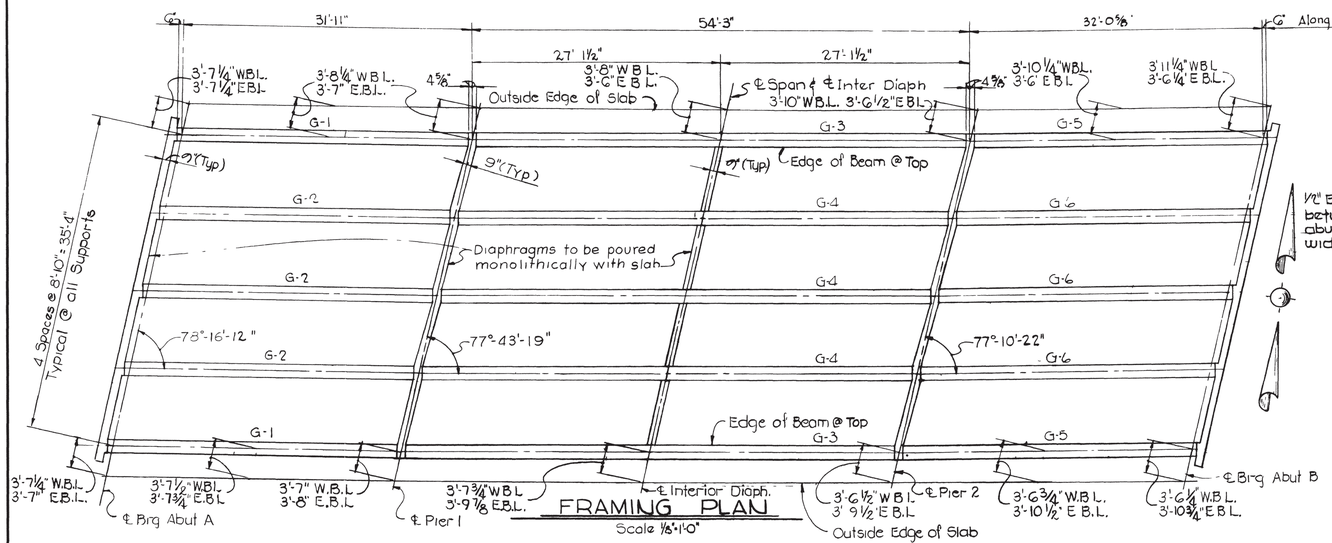
KNOERLE, BENDER STONE & ASSOCIATES, INC
NASHVILLE, TENN BALTIMORE, MD

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

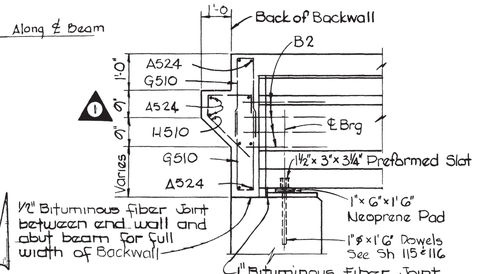
K-66-23

DESIGNED BY A.A.A DATE
DRAWN BY R.J.H DATE 5-27-65
TRACED BY R.J.H DATE
CHECKED BY J.S.P & C.M DATE Sept. 67

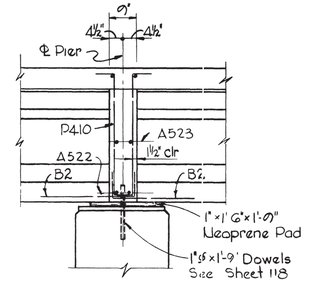
FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)105	1967	119	458



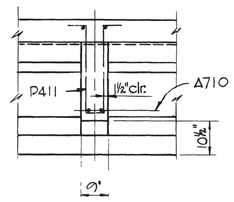
FRAMING PLAN
Scale 1/16"=1'-0"



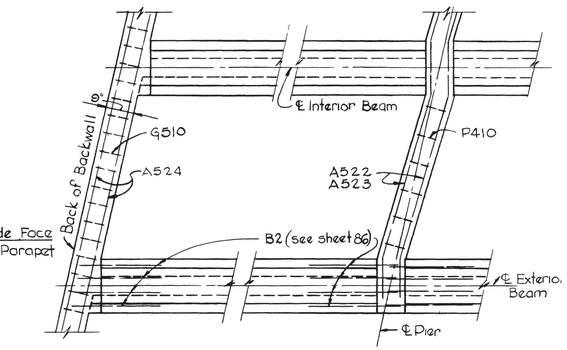
SECTION 119A
Scale ½"=1'-0"



SECTION 119B
Scale ½"=1'-0"

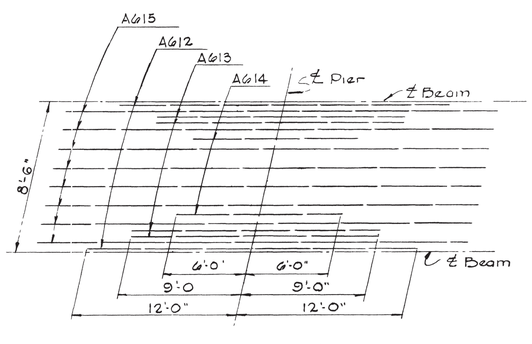


TYPICAL SECTION THRU INTERM. DIAPH.
Scale ½"=1'-0"

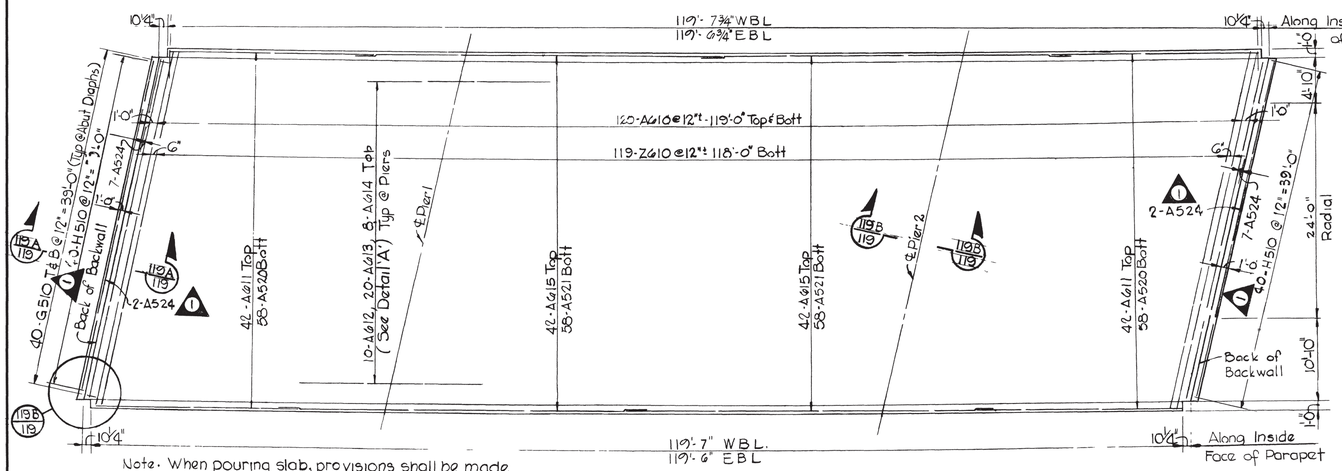


AT ABUTMENTS AT PIERS

TYPICAL BEAM DIAPHRAGMS
Not to Scale

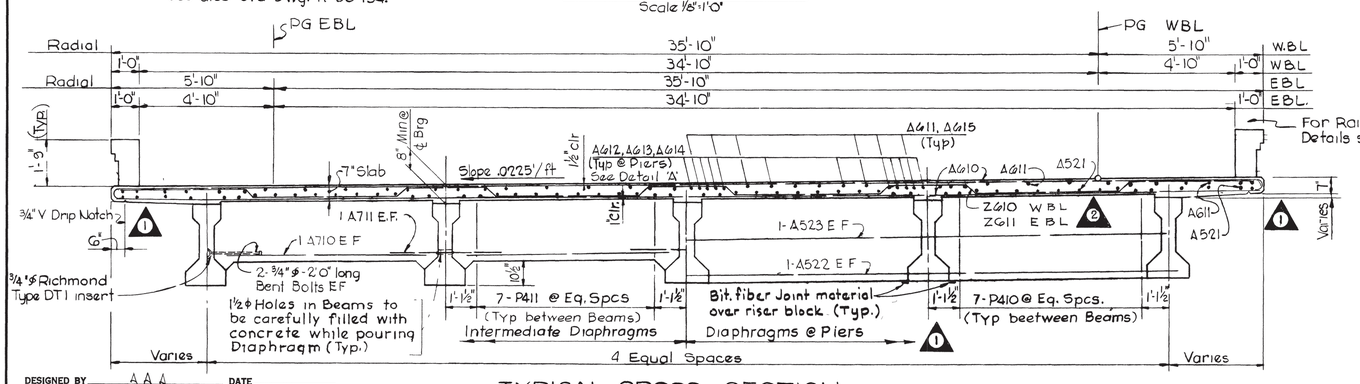


DETAIL 'A'
No Scale

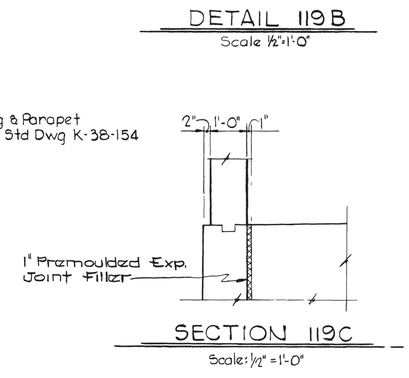


Note: When pouring slab, provisions shall be made for setting steel for concrete parapet See also Std Dwg. K-38-154.

SLAB PLAN
Scale 1/8"=1'-0"



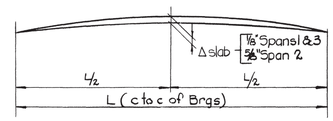
TYPICAL CROSS SECTION
Scale ⅜"=1'-0"



DETAIL 119B
Scale ½"=1'-0"

SECTION 119C
Scale: ½" = 1'-0"

Note: Slab construction joints may be located at the Contractors option However, no equipment shall be permitted on the Bridge until all pours are made and the concrete properly cured



DEAD LOAD DEFLECTION DIAGRAM
Not to Scale

REVISION
1. 10-19-67 W.O.D. Typ. Cross Section, Appro. Slab Bracket & Quant.
2. 10-16-68 D W F Reinf Steel Qts & "Z" Bar in slab

ESTIMATED QUANTITIES

①②	①Concrete Class 'A' Cu Yds.	Reinforcing Steel Lbs
EBL	131.1	43,751
WBL	132.1	45,419

① Cast in Place

DESIGNED BY A.A.A. DATE
DRAWN BY R.J.H. DATE 5-27-65
TRACED BY R.J.H. DATE
CHECKED BY J.S.P. & C.M. DATE Sept. 67

SCALE AS NOTED

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO. 3 & 3A I-40 OVER 40TH AVENUE DAVIDSON COUNTY SUPERSTRUCTURE & DETAILS

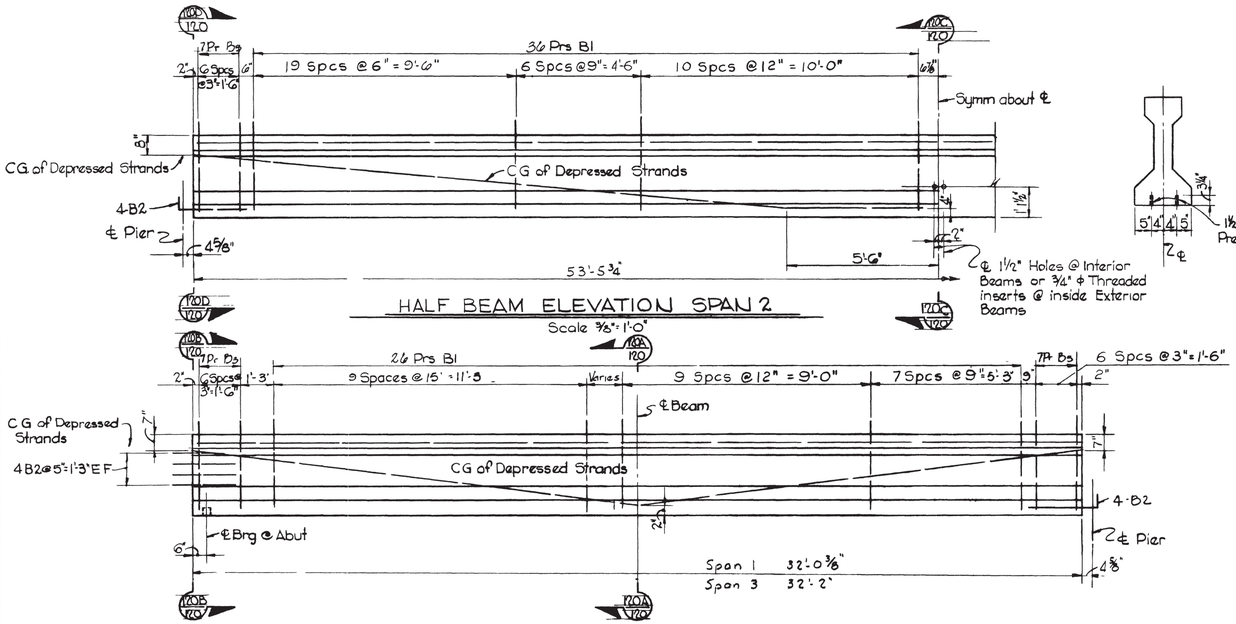
KNOERLE, BENDER, STONE & ASSOCIATES, INC
NASHVILLE, TENN BALTIMORE, MD

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66 24

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	120	458

REVISION 1 10-19-67 W.O.D. Inserts & Aggregate

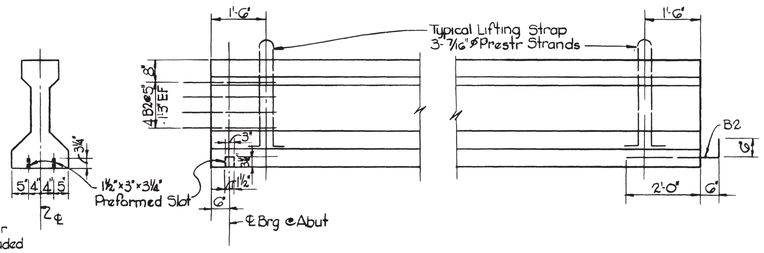


HALF BEAM ELEVATION SPAN 2

Scale 3/8" = 1'-0"

BEAM ELEVATION - SPAN 1 & 3

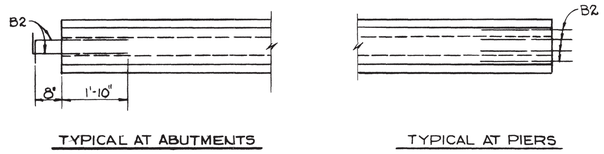
Scale 3/8" = 1'-0"



TYPICAL AT ABUTMENTS TYPICAL AT PIERS

PARTIAL BEAM ELEVATION

Scale 1/2" = 1'-0"



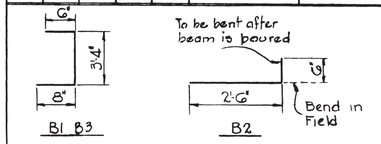
TYPICAL AT ABUTMENTS TYPICAL AT PIERS

PARTIAL BEAM PLAN

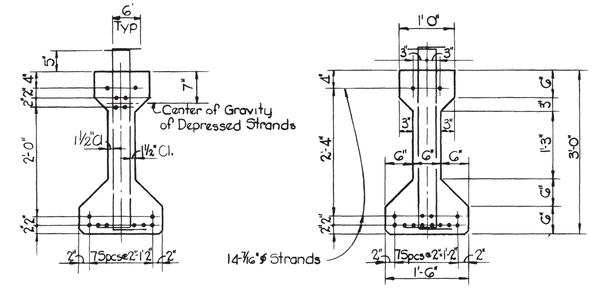
Scale 1/2" = 1'-0"

BEAM REINFORCING SCHEDULE

Bar	Number Span 1	Span 2	Span 3	Size	Length	Location
B1	520	1440	520	4	4'-6"	Web Stirrups
B2	120	80	120	6	3'-0"	Dowels @ Beam ends
B3	140	140	140	6	4'-6"	Web Stirrups



(Quantities for WBL & EBL)

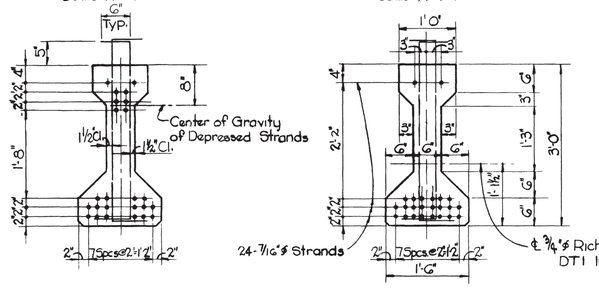


SECTION 120B

Scale 3/4" = 1'-0"

SECTION 120A

Scale 3/4" = 1'-0"

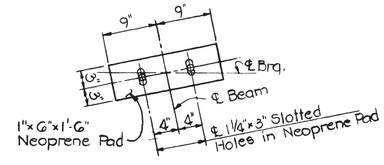


SECTION 120D

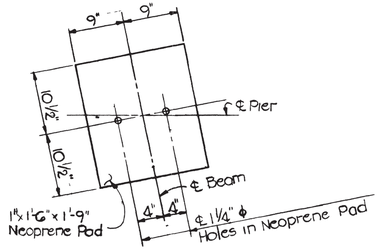
Scale: 3/4" = 1'-0"

SECTION 120C

Scale 3/4" = 1'-0"



For Abutments 20 Req'd



For Piers 20 Req'd

BEARING PAD DETAILS

Scale: 1" = 1'-0"

ESTIMATED QUANTITIES - PER BEAM

Beam	Concrete Class 'A' Cu Yds	Reinforcing Steel Lbs	Prestressing Steel Lbs	Threaded Inserts No.	Threaded Rods No
G-1	3.0	610	180	–	–
G-2	3.0	610	180	–	–
G-3	5.1	1,130	510	1	2
G-4	5.1	1,130	510	–	–
G-5	3.0	610	180	–	–
G-6	3.0	610	180	–	–

Notes

1. The top of all beams is to be rough floated. At approximately the time of initial set, the top of beams will be scrubbed transversely with a coarse wire brush to remove all laitence and to produce a rough surface
2. Preformed holes for Diaphragm connection shall be 1 1/2" ϕ Threaded inserts for intermediate Diaphragm at Exterior Beam connections are to be Richmond Type DT.1 Type DT1-5 or equal. Threaded rods are to provide 2'-0" splice with Diaphragm reinforcing.
3. Anchorage at expansion end of beams accomplished by dowels 1" ϕ x 1'-6" (40 Req'd), at fixed end by dowels 1" ϕ x 1'-9" (40 Req'd)
4. All prestressing strands shall be 7/16" ϕ high strength type 270 K 7 wire uncoated stress - relieved prestressing strands.
5. An initial force of 21,700 lbs shall be applied to each strand in all beams.
6. All beams are AASHO - PCI Standard Type II.
7. Concrete strength at release of tension shall be 4,000 psi
8. Mild steel reinforcing shall be intermediate or hard grade
9. After the beam is removed from the prestress bed, bars B2 shall be bent horizontally a sufficient amount so as to permit bars B2 of adjoining beams to mesh when in erected position.
10. The strands shall be left projecting 3' ± from the ends of the beams. There shall not be any protective coating placed on the ends of beams or on projecting strands.
11. Size 17 coarse aggregate will be permitted in the concrete.

DESIGNED BY A.A.A. DATE
DRAWN BY R.J.H. DATE 5-27-65
TRACED BY R.J.H. DATE
CHECKED BY J.S.P. & C.M. DATE Sept. 67

SCALE: AS NOTED

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STRUCTURES NO. 3 & 3A I-40 OVER 40TH AVENUE DAVIDSON COUNTY PRESTRESSED BEAMS & DETAILS

KNOERLE, BENDER, STONE & ASSOCIATES, INC
NASHVILLE, TENN. BALTIMORE, MD

CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

K-66-25

MICROFILMED

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN	I-40-3(54)205	1967	121	458

SLABS

MARK	BAR	NUMBER WBL	NUMBER EBL	SIZE	LENGTH	BENDING DIMENSIONS a	b	c	d	e	f	LOCATION
G510		160	160	5	5'-8"	2'-7"	6"					Diaph @ Abut
H510		80	80	5	① 4'-4"	6"	1'-5"	5"	2'-0"	1'-5"	1'-5"	" "
P410		56	56	4	8'-4"	6'	3'-5"	6"				Diaph @ Pier
P411		28	28	4	6'-6"	6"	2'-6"	6"				Int Diaph.
A520		116	116	5	22'-9"							Slab
A521		116	116	5	40'-0"							"
A522		4	4	5	35'-2"							Diaph @ Pier
A523		4	4	5	34'-0"							" "
A524		18	18	5	① 40'-0" ①							Diaph. @ Abut.
AG10		240	240	6	42'-3"							Slab
AG11		84	84	6	23'-6"							"
AG12	-	20	20	6	24'-0"							"
AG13		40	40	6	18'-0"							"
AG14		16	16	6	12'-0"							"
AG15		84	84	6	40'-0"							"
ZG10		119		6	② 45'-4" ①	43'-4"	6'-5"	4½"	4'-6"	3'-2"	6½"	"
A710		8	8	7	7'-4"							Int. Diaph.
A711		6	6	7	5'-0"							" "
AG16		238		6	② 4'-0"							Splice w/ZG10
ZG11			119	6	② 44'-0"	42'-3"	5'-6½"	4½"	3'-11"	4'-2"	6½"	Slab

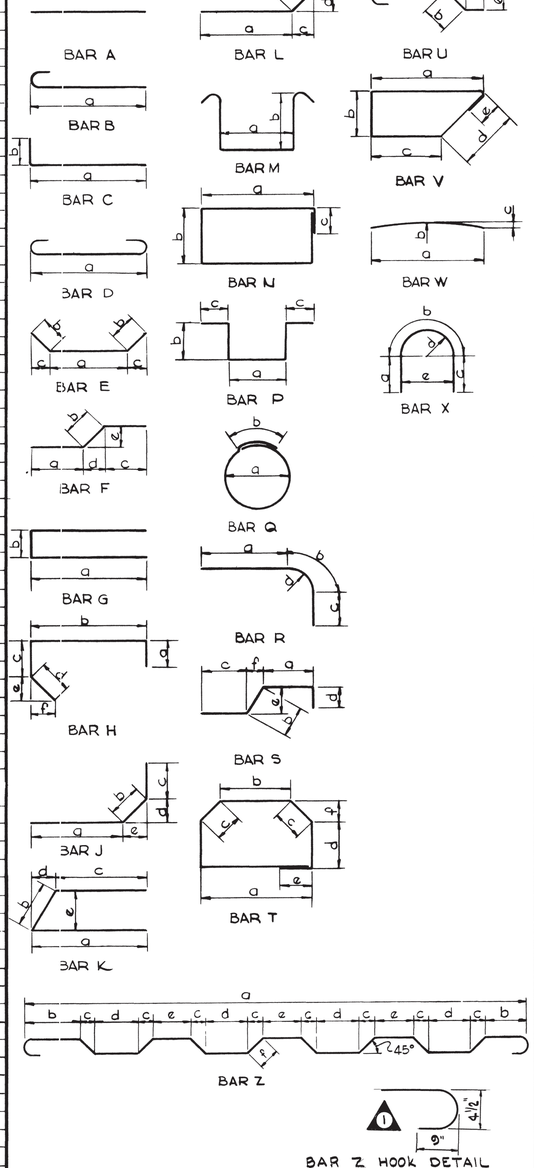
② See letter dated 10-16-68 for instructions regarding slab reinforcing modifications for WBL

ABUTMENTS

MARK	BAR	NUMBER A-EBL	A-WBL	B-EBL	B-WBL	SIZE	LENGTH	BENDING DIMENSIONS a	b	c	d	e	f	LOCATION
A401		4	4	4	4	4	3'-1"							Wingwall
A402		4	4	4	4	4	3'-4"							"
A404		4	4	4	4	4	5'-5"							"
G401		12	12	12	12	4	4'-4"	1'-10"	8"					"
G402		12	12	12	12	4	6'-0"	2'-8"	8"					"
H401		8	8	8	8	4	3'-5"	1'-1"	5"	11"	1'-0"	11"	7"	"
W401		4	4	4	4	4	6'-4"	5'-8"	5'-9"					"
W402		4	4	4	4	4	5'-4"	5'-3"	6'-0"					"
W403		4	4	4	4	4	5'-6"	5'-5"	6'-9"					"
A501		10	10	10	10	5	27'-3"							Footing
A502		5	5	5	5	5	10'-9"							"
A503		5	5	5	5	5	9'-9"							"
A504		44	44	44	44	5	3'-4"							"
A505		40	40	40	40	5	3'-8"							Wingwall
A507		4	4	4	4	5	10'-9"							Wing Post
A508		12	12	12	12	5	11'-8"							"
J501		4	4	4	4	5	7'-5"	1'-7"	3'-0"	2'-10"	11"	2'-10"		"
N501		43	43	43	43	5	9'-4"	2'-1"	2'-1"	1'-0"				Footing
A701		4	4	4	4	7	18'-9"							"
A702		4	4	4	4	7	25'-9"							"
A703		3	3	3	3	7	9'-9"							"
A704		3	3	3	3	7	10'-9"							"
A801		10	10	10	10	8	27'-6"							"
A802		2	2	2	2	8	10'-9"							"
A803		2	2	2	2	8	9'-9"							"

PIERS

MARK	BAR	NUMBER 1-EBL	2-EBL	1-WBL	2-WBL	SIZE	LENGTH	BENDING DIMENSIONS a	b	c	d	e	f	LOCATION
N410		80	80	80	80	4	9'-7"	1'-7½"	2'-8"	1'-0"				Cap
N411		16	16	16	16	4	9'-8"	2'-2"	2'-2"	1'-0"				Column
T410		32	32	32	32	4	9'-4"	2'-2"	1'-6"	6"	1'-10"	1'-0"	4"	"
A530		2	2	2	2	5	36'-2"							Cap
AG31		24	24	24	24	6	① 6'-10"	5'-6"						Footing
DG30		36	36	36	36	6	7'-10"	6'-6"						"
A830		36	36	36	36	8	18'-0"							Column
C830		36	36	36	36	8	① 5'-2"	4'-8"	6"					Footing
A930		5	5	5	5	9	36'-4"							Cap
A931		4	4	4	4	9	13'-6"							"
A932		5	5	5	5	9	12'-0"							"
A933		5	5	5	5	9	36'-2"							"
R930		8	8	8	8	9	11'-2"	4'-0"	3'-2"	4'-0"	2'-0"			"



REVISION
① 10-19-67 W.O.D. Slab & Pier Bars
② 10-16-68 DWF Slab Reinf Steel

NOTES:
1 Reinforcing steel detailed as per Manual of Standard Practice for Reinforced Concrete Structures A.C.I.
2 Standard Hooks as recommended by CRSI shall apply unless otherwise noted.
3 Bar dimensions are out to out.

DESIGNED BY AAA DATE
DRAWN BY AAA DATE
TRACED BY FRO DATE 3-2-66
CHECKED BY JSP & CM DATE Sept. 67

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

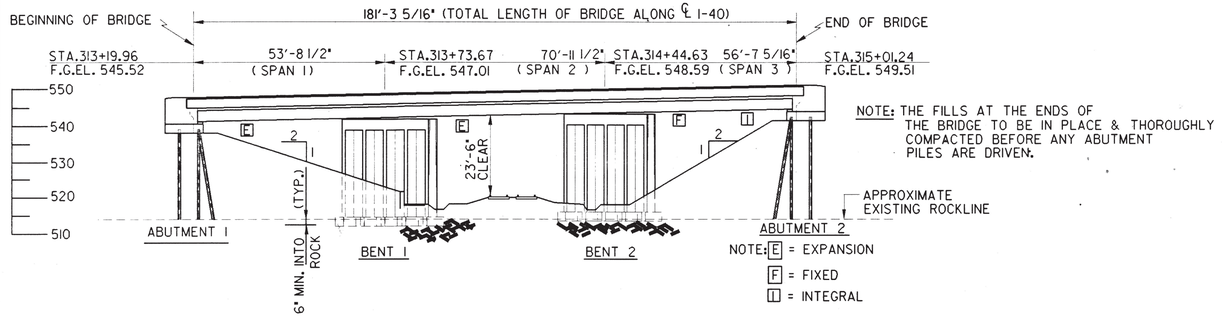
STRUCTURES NO. 3 & 3A
I-40 OVER 40TH AVENUE
DAVIDSON COUNTY
REINFORCING STEEL SCHEDULE

KNOERLE, BENDER, STONE & ASSOCIATES, INC.
NASHVILLE, TENN. BALTIMORE, MD

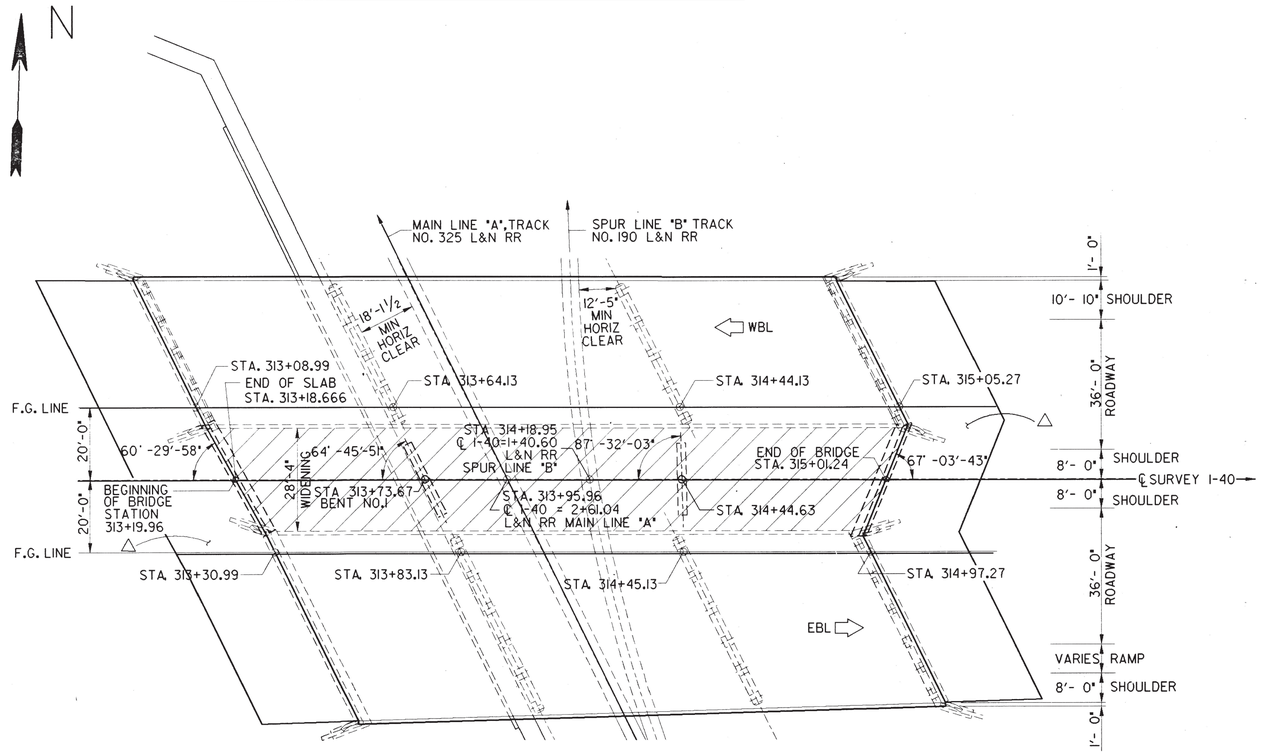
CORRECT _____ BRIDGE ENGINEER
APPROVED _____ STATE HIGHWAY ENGINEER

V 66 26

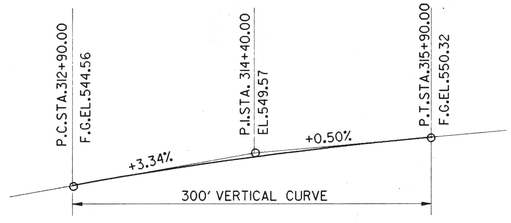
MICROFILMED



ELEVATION AT RIGHT ANGLES TO ℄ SURVEY I-40



PLAN



I-40 GRADE SKETCH

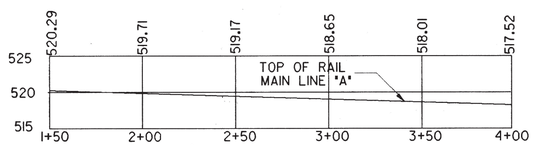
(ELEVATIONS SHOWN ARE BASED ON FINISHED GRADES)

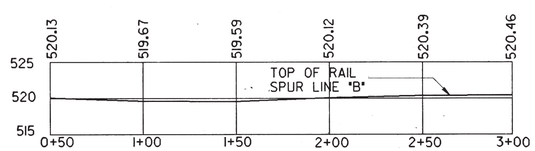
LIST OF REFERENCE DRAWINGS

	DWG. NO.
GENERAL PLAN & ELEVATION	K-66-12
ABUTMENTS (W.B. LANE)	K-66-13
ABUTMENT "A" (E.B. LANE)	K-66-13A
ABUTMENT "B" (E.B. LANE)	K-66-13B
ABUTMENT DETAILS	K-66-14
PIERS (W.B. LANE)	K-66-15
PIERS (E.B. LANE)	K-66-15A
FRAMING PLAN & DETAILS (W.B. LANE)	K-66-16
FRAMING & SLAB PLAN (E.B. LANE)	K-66-16A
SLAB PLAN (W.B. LANE)	K-66-17
REINFORCING STEEL SCHEDULE	K-66-18
PAVEMENT AT BRIDGE ENDS	P-R-6

LIST OF SPECIAL PROVISIONS

NO.	TITLE	LAST REV.DATE
907A	REGARDING EPOXY COATED REINFORCING STEEL	4-18-83
604A	REGARDING CLASS "A" CONC. FOR BRIDGE DECKS	12-20-82
105A	REGARDING APPROVAL OF SHOP DRAWINGS	9-8-81
602	REGARDING SECTION 602 STEEL STRUCTURES	5-31-83





PROFILE OF RAILROAD

SCALES HOR.1"=20'-0", VERT. 1"=5'-0"

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

LIST OF DRAWINGS

DWG.	DWG. NO.	LAST REV. DATE
LAYOUT OF BRIDGE	M-144-77	
GENERAL NOTES AND ESTIMATED QUANTITIES	M-144-78	3-3-85
SUPERSTRUCTURE	M-144-79	3-3-85
SUPERSTRUCTURE DETAILS	M-144-80	3-3-85
SUPERSTRUCTURE DETAILS	M-144-81	2-18-85
STRUCTURAL STEEL DETAILS	M-144-82	2-25-85
BEARING DEVICE AND DIAPHRAGM DETAILS	M-144-83	
ABUTMENT NO.1	M-144-84	
ABUTMENT NO.2	M-144-85	
BENT NO.1	M-144-86	
BENT NO.2	M-144-87	
APPROACH SLAB DETAILS	M-144-88	
BILL OF STEEL	M-144-89	3-3-85
BILL OF STEEL	M-144-90	

LIST OF STANDARD DRAWINGS

DWG.	DWG. NO.	LAST REV. DATE
STD. REINFORCING BAR SUPPORT DETAILS	K-80-14	8-27-76
MISCELLANEOUS ABUTMENT & DRAINAGE DETAILS	K-85-150	1-9-75
STD. PORTABLE BARRIER RAIL	K-38-158	7-17-81
STD. PILE DETAILS	H-5-111	11-12-82
SLOPE PROTECTION	RD-SA-1	1-11-82
PRECAST PRESTRESSED BRIDGE DECK PANELS	M-103-149 & 150	4-21-83
LIGHT STANDARD SUPPORT DETAILS	M-8-149	11-20-75

VARIABLE ROADWAY WITH CONC.RAIL
EST. 2005 A.D.T.= 97000

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

LAYOUT OF BRIDGE
WIDENING OF STRUCTURES 2 & 2A
I-40 OVER L&N RAILROAD
STATION 313+95.96
DAVIDSON COUNTY
1984

CORRECT Charles L Forcade
ENGINEER OF STRUCTURES

APPROVED Louis Evans
DIRECTOR OF HIGHWAYS

M-144-77

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	BWS&C CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

WINFORD A. PETRUNE
REGISTERED ENGINEER
No. 13774
STATE OF TENNESSEE

SEE M-314-66(WID) CLASS "A" GRADING "D" 64 C.Y.

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	2/13/85	W.A.P.	FOOTNOTE #11 FOR ITEM 603-02.01 & ITEMS 604-02.03,604-03.02 AND 606-02.03
2	3/03/85	W.A.P.	EPOXY REINF QUANTITY

ITEM NO.	202-04.05	204-02.01	204-04.01	204.05	602-04.01	602-05.08	603-02.01	604-01.12	604-02.03	604-03.01	604-03.02	604-03.03	604-04.01	604-04.02	604-36
	REMOVAL OF STRUCTURES L.S. ⑦	DRY EXCAVATION (BRIDGES) C.Y. ①	ROCK EXCAVATION (BRIDGES) C.Y.	ROCK DRILLING (BRIDGES) L.F.	STEEL STRUCTURES (STA.313+95.96 3SP. CONT.ROLLED BMS.) L.S. ②	STANDARD ELASTOMERIC EXPANSION DEVICE L.F. ⑥	REPAINTING EXISTING STEEL STRUCTURES L.S. ⑪ ⚠1	CLASS "A" CONCRETE (BRIDGE DECK) (C.Y.)	EPOXY COATED REINFORCING STEEL LB.	CLASS "A" CONCRETE (BRIDGES) (C.Y.)	STEEL BAR REINFORCING (BRIDGES) LB.	LINSEED OIL TREATMENT S.Y.	APPLIED TEXTURE FINISH (NEW STRUCTURES) S.Y.	APPLIED TEXTURE FINISH (EXIST. STRUCTURES) S.Y.	SCARIFYING S.Y.
SUPERSTRUCTURE								395.1	92,597 ⚠1 ⚠2	6.1	313				
ABUTMENT NO. 1		20							605	16.7	3,705				
BENT NO. 1		22	9	12						29.9	6,182				
BENT NO. 2		29	11	12						29.3	6,089				
ABUTMENT NO. 2		19								8.8	1,796				
PAV'MT @ BR. ENDS									15,511 ⚠1	151.1	17,809 ⚠1				
TOTAL	1	90	20	24	1	137	1	395.1	108,713 ⚠1 ⚠2	241.9	35,894 ⚠1	3,012	209	1,075	1,995

ITEM NO.	604-10.30	604-10.50	606-02.03	705-08.03	710-10	710-11	908-21.02	908-21.03
	BRIDGE DECK REPAIRS (FULL DEPTH OF SLAB) S.Y.	BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB) S.Y. ⑤	STEEL PILES (10 INCH) L.F.	REINFORCED CONCRETE MEDIAN BARRIER (BRIDGES) L.F. ⑧	6" PERFORATED C.M. PIPE (18 GA.) WITH POROUS BACKFILL L.F. ④	6" C.M. PIPE UNDERDRAINS (18 GA.) L.F.	BEARINGS (HT. = 4½") EA.	BEARINGS (HT. = 3¾") EA.
SUPERSTRUCTURE								
ABUTMENT NO. 1			110		40	13		
BENT NO. 1								
BENT NO. 2								
ABUTMENT NO. 2			103		38	13		
PAV'MT @ BR. ENDS			90 ⚠1					
TOTAL	2	200	303 ⚠1	230	78	26	3	3

1. EXCAVATION BASED ON EXISTING GROUND.

2. THE COST OF BITUMINOUS-FIBERBOARD AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN BRIDGE ITEMS BID ON.

3. LUMP SUM : TOTAL ESTIMATED WEIGHT OF 87,850 LBS. OF STRUCTURAL STEEL INCLUDES SHEAR CONNECTORS, BOLTS, ETC. ALSO , SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.53 AND 602.54.

4. COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN COST OF PERFORATED C.M. PIPE.

5. ITEMS 604-10.50 & 604-10.30 SHALL BE BID WITH THE CONTINGENCY THAT THIS ITEM MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE THE ENGINEER. ALL PARTIAL DEPTH REPAIRS ARE TO BE MADE ONLY ON DECK SLABS THAT ARE NOT TO BE REMOVED.

6. THE EXPANSION JOINT AT ABUTMENT NO.1 SHALL BE EITHER DELASTIFLEX MT200, ONFLEX25, OR STEELFLEX RS200. THE CONTRACTOR MAY ALSO SUBMIT ALTERNATE DETAILS TO THE ENGINEER FOR APPROVAL. THE TOTAL REQUIRED MOVEMENT IS TWO INCHES . SHOP DRAWINGS OF THE PROPOSED DEVICE SHALL BE SUBMITTED TO THE ENGINEER OF STRUCTURES FOR APPROVAL. THE SHOP DRAWINGS SHALL PROVIDE INFORMATION REGARDING MATERIAL SPECIFICATIONS, GEOMETRY, A TABLE OF VARIABLE TEMPERATURES AND DIMENSIONS, AND A BILL OF MATERIALS. IF IT IS NECESSARY TO MODIFY THE DESIGN DRAWING TO ACCOMODATE THE ROADWAY EXPANSION DEVICE, ANY ADDITIONAL LABOR OR MATERIAL COST WILL BE AT THE CONTRACTORS EXPENSE.

7. THE COST OF REMOVING THE EXTERIOR PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT, AND THE BRIDGERAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202-04.05.

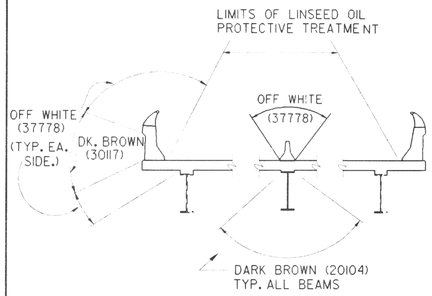
8. ALL REINFORCING STEEL IN REINFORCED CONCRETE MEDIAN BARRIER SHALL BE EPOXY COATED. COST TO BE INCLUDED IN THE PRICE BID FOR ITEM 705-08.03.

9. EXISTING AREAS OF SLOPE PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR. ALL COSTS TO BE INCLUDED IN ITEMS BID ON.

10. COST OF 3 - 1'x20'x1'-10" AND 3 - 1'x20'x0'-8" ELASTOMERIC PADS TO BE INCLUDED IN ITEMS BID ON.

⚠1

11. INCLUDES REPAINTING OF APPROXIMATELY 170 TONS OF EXISTING STRUCTURAL STEEL MEMBERS.



APPLIED TEXTURE FINISH AND PAINT DETAIL.

FINISH CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATIONS. A TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS 2 FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO OFF-WHITE, FEDERAL SPECIFICATION NO. 37778, OR DARK BROWN (NO. 30117), FEDERAL COLOR STANDARD NO.595A AND A COLOR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE.

ALL EXPOSED SURFACES OF ABUTMENTS AND BENTS SHALL RECEIVE AN APPLIED TEXTURE FINISH OFF-WHITE. PAYMENT FOR THE APPLIED TEXTURE FINISH SHALL BE UNDER ITEM 604-04.01 OR 604-04.02.

PAINT: INORGANIC ZINC-VINYL SYSTEM BROWN TOP COAT (FEDERAL SPECIFICATION NO. 20140.) FOR PREPARATION OF SURFACES SEE TENNESSEE STANDARD SPECIFICATION 603.05 (B).

THE REINFORCED CONCRETE MEDIAN BARRIER RAIL SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON DRAWING M-144-79 AND SHALL BE GIVEN AN APPLIED TEXTURE FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO OFF-WHITE, FEDERAL SPECIFICATION NO. 37778. THE COST OF THE FINISH AND REINFORCING STEEL DETAILED SHALL BE INCLUDED IN THE LINEAR FOOT PRICE BID FOR THE MEDIAN RAIL.

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	BWS&C CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH, 1981 EDITION)

LOADING: HS20-44 WITH ALTERNATE MILITARY

DESIGN SPECIFICATIONS: AASHTO 1977 EDITION WITH ADDENDA

CONCRETE: TO BE CLASS "A" f'_c = 3000 PSI UNLESS OTHERWISE NOTED.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS, IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO SUPPORT MEMBERS. THE CONTRACTOR SHALL TAKE STEPS TO ASSURE THE STABILITY OF THE EXTERIOR GIRDER AGAINST TWISTING OR OVERTURNING DURING SLAB POURING OPERATIONS.

REINFORCING STEEL: TO BE ASTM A615 GRADE 60. STANDARD CRSI HOOK DETAILS APPLY UNLESS OTHERWISE NOTED ON BILL OF STEEL. BENDING DIMENSIONS SHOWN ARE BASED ON GRADE 60. SPACING DIMENSIONS ARE CENTER TO CENTER UNLESS OTHERWISE NOTED ON DETAIL DRAWINGS. THE SUFFIX E, FOR BARS SO MARKED, DENOTES EPOXY COATED REINFORCEMENT. SEE SPECIAL PROVISION 907A.

SPECIAL NOTE FOR BRIDGE DECK CONCRETE: CLASS A CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS EXCEPT AS MODIFIED BY SPECIAL PROVISION 604A. PAYMENT WILL BE MADE UNDER ITEM 604-01.12.

FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 6' DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

PILES: TO BE HP10X42 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 55 TONS FOR THE ABUTMENTS.

GROUTED BARS IN DRILLED HOLES: HOLES FOR GROUTED BARS ARE TO BE DRILLED ½ INCH IN DIAMETER LARGER THAN THE BAR. AFTER CLEANING THE HOLE, PACK WITH GROUT AND DRIVE BAR TO ITS SEAT. APPROVED GROUTS ARE: EPITOP 100 (CELANESE COATING CO.); COLMA-DUR OR SIKASTIX 370 (SIKA CHEMICAL CORP.); FX-75 HYDRO-ESTER BONDING AGENT (FOX INDUSTRIES) AND FEL-POXY 102 (FEL-PRO BUILDING PRODUCTS, INC.)

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A

NON-PAY ITEMS: ONLY ITEMS SHOWN ON THE PROPOSAL AS PAY ITEMS WILL BE PAID FOR. COMPENSATION FOR ALL LABOR, MATERIALS, TOOL, EQUIPMENT, AND INCIDENTALS FOR THE ENTIRE CONTRACT SHALL BE INCLUDED IN THE PRICE BID FOR PAY ITEMS.

SPECIAL NOTE FOR RAILROAD CROSSINGS: THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE DONE IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE L & N RAILROAD SO AS TO MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC.

BEARING DEVICES: BEARING DEVICES SHALL BE IN ACCORDANCE WITH THE DETAILS AND DIMENSIONS SHOWN ON DRAWING M-144-83. THE CONTRACTOR MAY ALSO SUBMIT ALTERNATE DETAILS FOR APPROVAL.

SPECIAL NOTE FOR UTILITIES: IT IS INTENDED THAT THE COST OF MATERIALS AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION OF UTILITIES SHALL BE BORNE BY OTHERS AND SHALL NOT BE PAID FOR AS A PART OF THIS CONTRACT. THE CONTRACTOR SHALL COOPERATE WITH OTHERS IN THE INSTALLATION OF UTILITIES WITH NO ADDITIONAL COMPENSATION ALLOWED THE CONTRACTER AS A RESULT.

LINSEED OIL PROTECTIVE TREATMENT: SURFACES RECEIVING AN APPLIED TEXTURED FINISH SHALL NOT RECEIVE A LINSEED OIL TREATMENT. SEE APPLIED TEXTURE FINISH DETAIL ON THIS SHEET.

WELDING: SEE SPECIAL PROVISION NO.602 AND NOTES ON DRAWING NO. M-144-82.

RADIOGRAPHIC, ULTRASONIC, AND MAGNETIC INSPECTION: SEE SPECIAL PROVSION NO.602 AND NOTES ON DRAWING NO. M-144-82.

STEEL STRUCTURES: SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602 AND NOTES ON DRAWING NO. M-144-82.

NOTE: ALL FILL SHALL BE IN PLACE PRIOR TO EXCAVATING FOR BENT FOOTINGS. AFTER CONSTRUCTING THE BENT, EXTREME CARE SHALL BE TAKEN WHEN BACKFILLING SO AS NOT TO DAMAGE OR MISALIGN THE BENT.

NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDERS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

GENERAL NOTES AND ESTIMATED QUANTITIES WIDENING OF STRUCTURES 2 & 2A I-40 OVER L&N RAILROAD STATION 313+95.96 DAVIDSON COUNTY 1984

CORRECT Gleldon L Loveall
ENGINEER OF STRUCTURES

APPROVED Lewis Guard
DIRECTOR OF HIGHWAYS

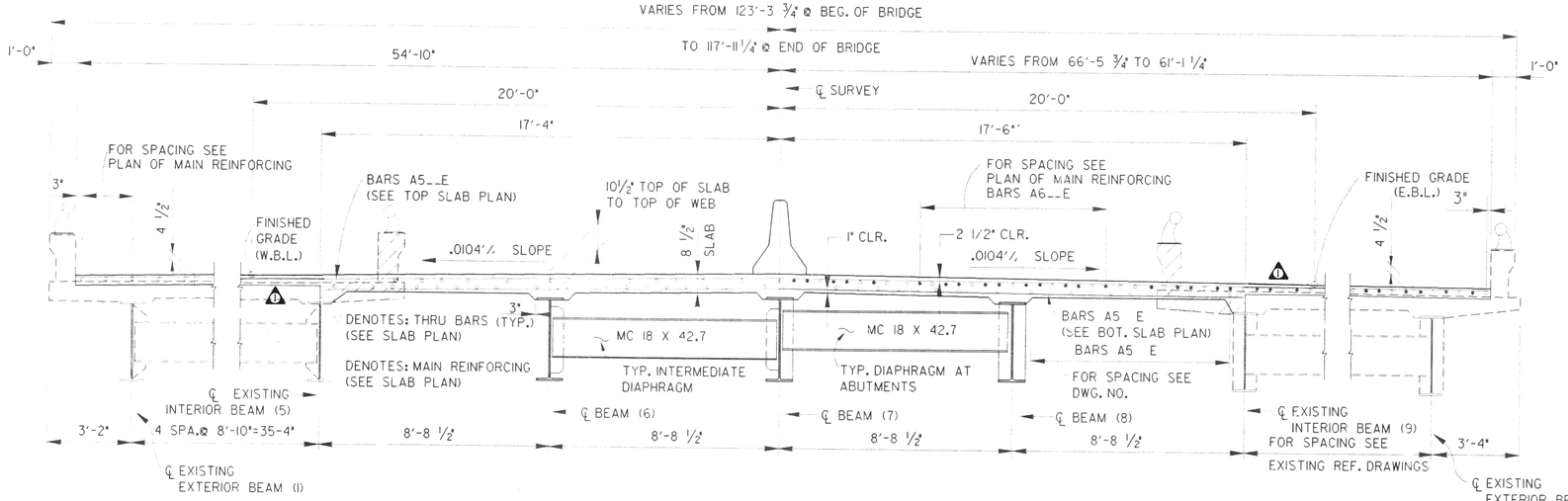
M-144-78

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

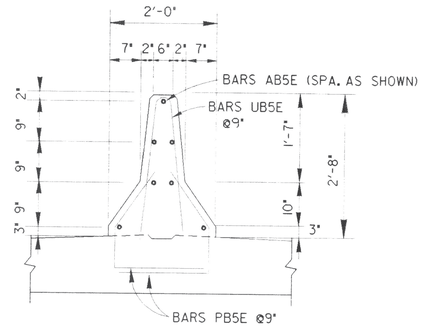
NO.	DATE	BY	BRIEF DESCRIPTION
1	2/14/85	W.A.P.	SPLICE LOCATION FOR PHASED CONSTR. ESTIMATED EPOXY COATED STEEL IN SUPERSTRUCTURE
2	3/03/85	W.A.P.	CORRECTED EPOXY REINF. QTY.



HALF SECTION NEAR MID-SPAN

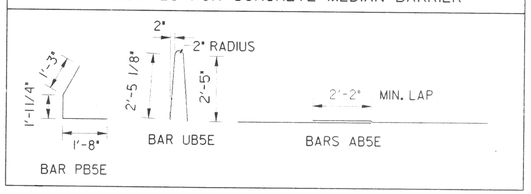
HALF SECTION NEAR SUPPORT

TYPICAL CROSS SECTION
(LOOKING FORWARD ON SURVEY)

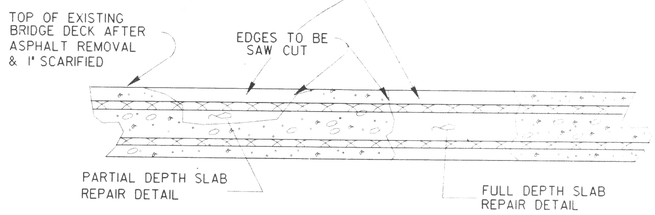


REINFORCED CONCRETE MEDIAN BARRIER

BAR DETAILS FOR CONCRETE MEDIAN BARRIER



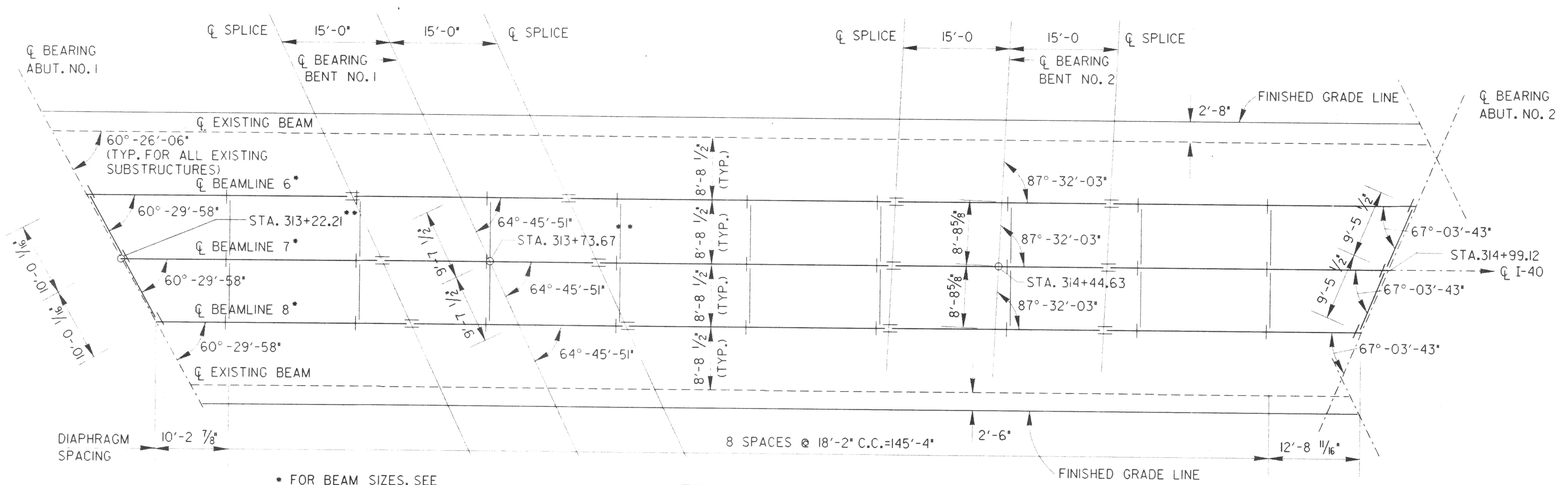
NOTE: CONCRETE FOR DECK REPAIR SHALL BE POURED WHEN POURING THE 4 1/2" NEW DECK. THE COST OF THE CONCRETE BELOW THE SCARIFICATION LEVEL TO BE INCLUDED IN THE ITEM 604-10.30 OR 604-10.50.



SKETCH SHOWING DECK REPAIR

NOTE : REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF 3/4" BELOW THE TOP MAT OF THE REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE BLAST CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE DIVISION OF STRUCTURES. PARTIAL DEPTH DECK REPAIR WILL BE PAID FOR UNDER ITEM NO.604-10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), SQ.YD. IF DETERIORATED CONCRETE IS ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB THEN THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604-10.30, BRIDGE DECK REPAIR (FULL DEPTH OF SLAB), SQ. YD.

NOTE : ITEMS 604-10.30 AND 604-10.50 SHALL BE BID WITH THE CONTINGENCY THAT THESE ITEMS MAY BE INCREASED, DECREASED OR ELIMINATED AS DIRECTED BY THE ENGINEER.



* FOR BEAM SIZES, SEE BEAM ELEVATION ON SHEET NO. M-144-82.

** STATIONS GIVEN AT CENTERLINE OF BEARING AND BEAM.

FRAMING PLAN

(ALL DIMENSIONS TO BE FIELD VERIFIED PRIOR TO FABRICATION)

NOTE: LOCATION OF INTERMEDIATE DIAPHRAGMS MAY BE SHIFTED 1' - 0" MAX. TO MISS BEARING STIFFENERS OR SPLICES.

ITEM	CONCRETE CLASS "A" BRIDGE DECK C.Y.	CONCRETE CLASS "A" C.Y.	REINFORCING STEEL LBS.	EPOXY COATED REINFORCING STEEL LBS.
SUPERSTRUCTURE	395.1	6.1	313	92,597 ⚠1 ⚠2

ESTIMATED QUANTITIES (PER FOOT OF BARRIER)

APPLIED TEXTURE FINISH (NEW STRUCTURE) S.Y.	CONCRETE CLASS "A" C.Y.	EPOXY COATED REINFORCING STEEL LBS.
.691	.101	25.3

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE
WIDENING OF STRUCTURES 2 & 2A
I-40 OVER L&N RAILROAD
STATION 313+95.96
DAVIDSON COUNTY
1984

CORRECT Clellon L Loveall
ENGINEER OF STRUCTURES

APPROVED Lewis Swan
DIRECTOR OF HIGHWAYS

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	BWS&C CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

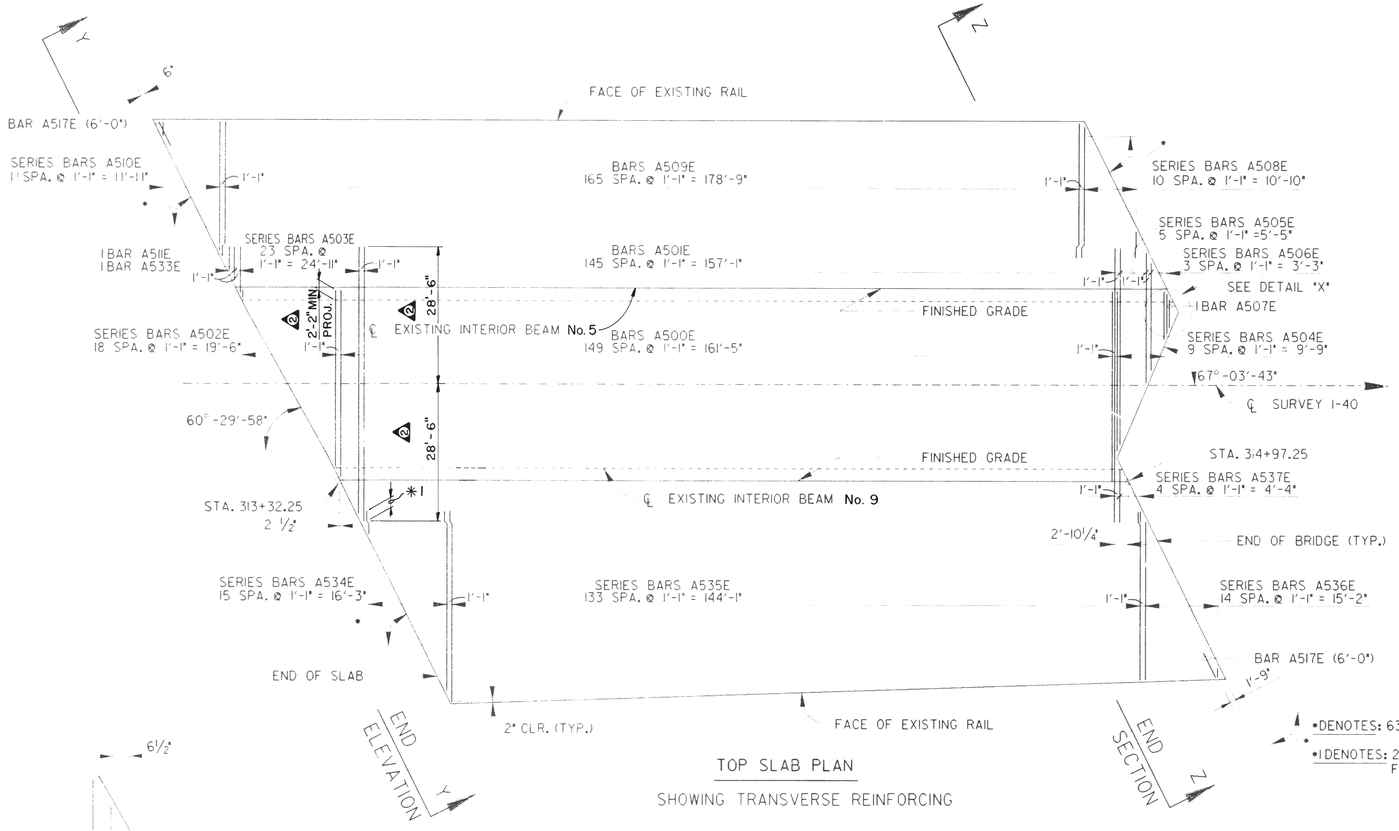
M-144-79

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

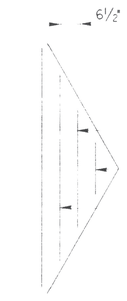
REVISIONS

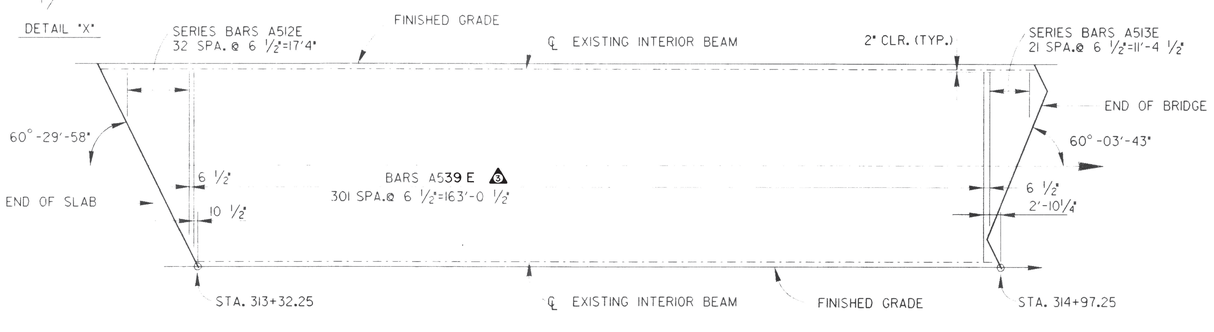
NO.	DATE	BY	BRIEF DESCRIPTION
1			PHASE CONSTRUCTION
2	2/14/85	W.A.P.	SPLICE LOCATION, PHASE CONSTR.
3	3/03/85	W.A.P.	REVISED BAR MARK



TOP SLAB PLAN

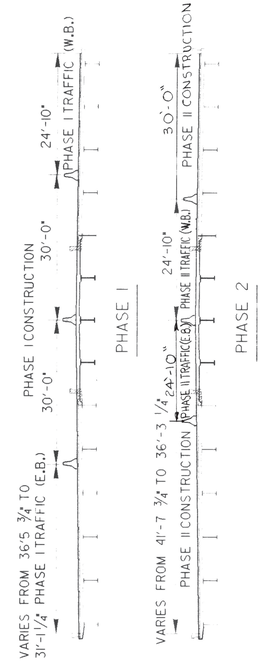
SHOWING TRANSVERSE REINFORCING





BOT. SLAB PLAN

SHOWING TRANSVERSE REINFORCING



BARRIER LOCATION FOR PHASED CONSTRUCTION (LOOKING BACK ON SURVEY)

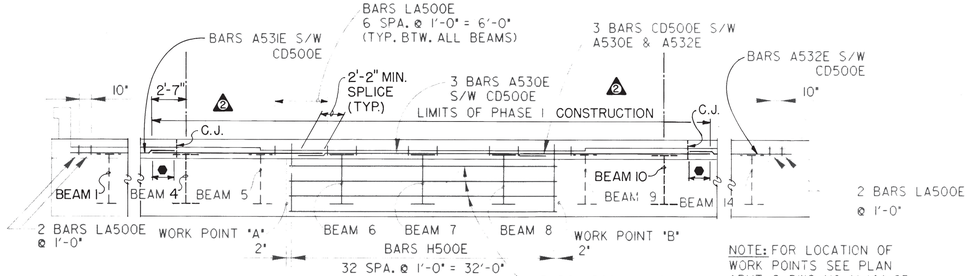
CONSTRUCTION SEQUENCE

PHASE I

1) CONSTRUCT ALL SUBSTRUCTURES TO THE MAXIMUM EXTENT POSSIBLE W/O DISTURBING INTERSTATE TRAFFIC.
2) REROUTE TRAFFIC AWAY FROM MEDIAN AREA AND PLACE TEMPORARY MEDIAN VARIES AS INDICATED.
3) REMOVE EXISTING CANTILEVER SLABS, CURBS, AND BRIDGE RAIL IN MEDIAN AREA AS SHOWN ON THE PLANS. SCARIFY PORTIONS OF EXISTING SLABS WHICH ARE EXPOSED ON THE MEDIAN SIDE OF THE TEMPORARY BARRIERS FOR A DEPTH OF ONE INCH.
4) CONSTRUCT MEDIAN PORTION OF SUPERSTRUCTURE INCLUDING BEAMS, SLAB, AND REINFORCED CONCRETE MEDIAN BARRIER.

PHASE II

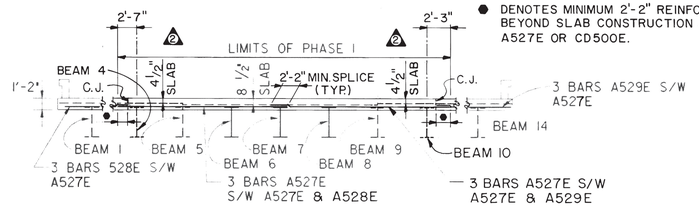
1) REROUTE E.B. & W.B. TRAFFIC TO MEDIAN AREA AND PLACE TEMPORARY BARRIERS AS INDICATED.
2) SCARIFY EXISTING CONCRETE DECK FOR A DEPTH OF ONE INCH IN AREAS DESIGNATED FOR PHASE II CONSTRUCTION.
3) CONSTRUCT 4 1/2" TOPPING SLAB OVER EXISTING DECK FOR AREAS DESIGNATED FOR PHASE II CONSTRUCTION.



NOTE: FOR LOCATION OF WORK POINTS SEE PLAN ABUT. 2, DWG. NO. M-144-85

END SECTION Z-Z

SEE ALSO DWG. NO. M-144-81 FOR SECTION @ NEW & EXISTING GIRDERS (ABUT. "2")



END ELEVATION "Y"-"Y"

SEE ALSO, DWG. NO. M-144-81 FOR SECTIONS @ NEW & EXISTING GIRDERS. (ABUT. "1")

●DENOTES: 63°-26'-06"

●1 DENOTES: 2'-2" MIN. LAP FOR #5 BARS (TYP.)

● DENOTES MINIMUM 2'-2" REINFORCING PROJECTION BEYOND SLAB CONSTRUCTION JOINT FOR BARS A527E OR CD500E.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS WIDENING OF STRUCTURES 2 & 2A I-40 OVER L&N RAILROAD STATION 313+95.96 DAVIDSON COUNTY 1984

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	BWS&C CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

CORRECT Charlton L Loveall
ENGINEER OF STRUCTURES

APPROVED Louis Evans
DIRECTOR OF HIGHWAYS

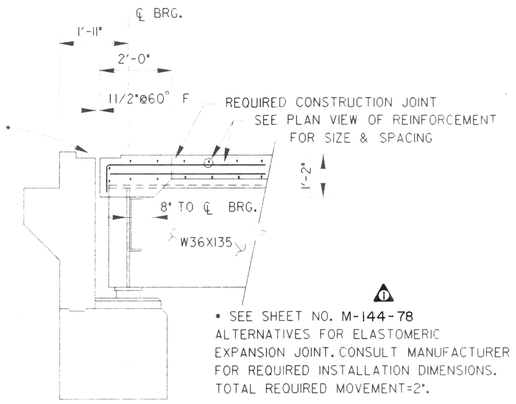
M-144-80

CONST. NO. 19003-3149-44

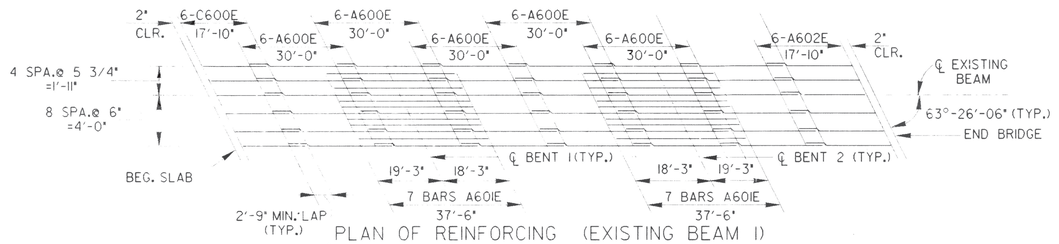
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

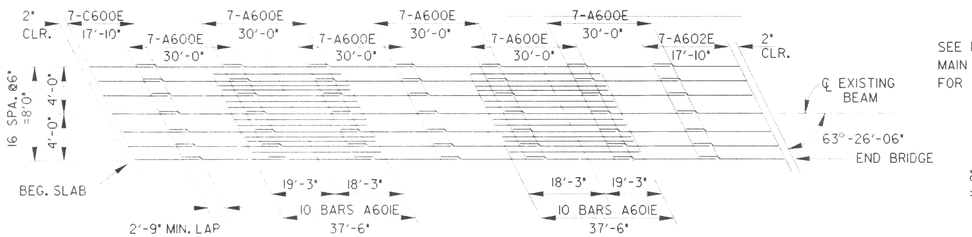
NO.	DATE	BY	BRIEF DESCRIPTION
1	2/18/85	W.A.P.	REVISED BRIDGE NOTES



SECTION @NEW GIRDER THRU ABUT. NO.1

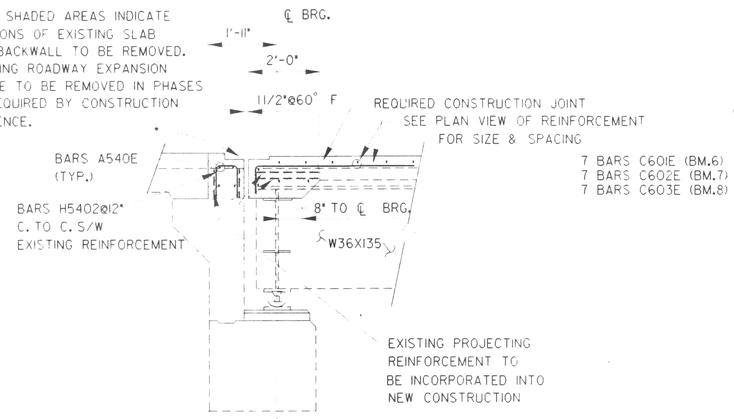


PLAN OF REINFORCING (EXISTING BEAM 1)

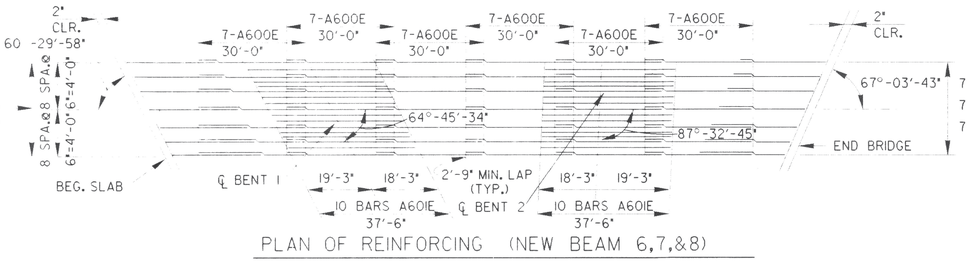


PLAN OF REINFORCING (EXISTING BEAM 2,3,4,&5)

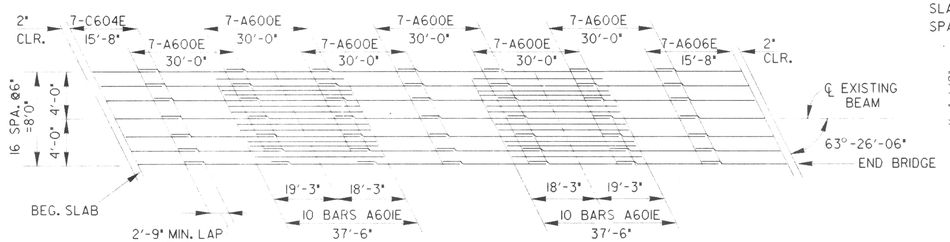
NOTE: SHADED AREAS INDICATE PORTIONS OF EXISTING SLAB AND BACKWALL TO BE REMOVED. EXISTING ROADWAY EXPANSION DEVICE TO BE REMOVED IN PHASES AS REQUIRED BY CONSTRUCTION SEQUENCE.



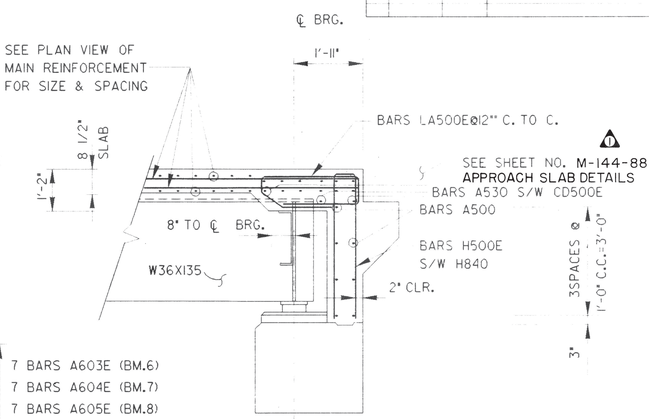
SECTION @EXISTING GIRDER THRU ABUT. NO.1



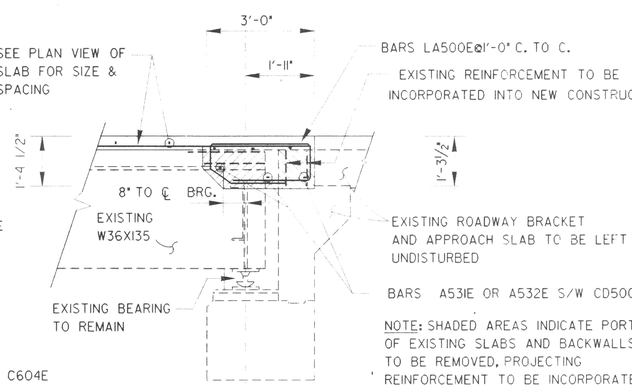
PLAN OF REINFORCING (NEW BEAM 6,7,&8)



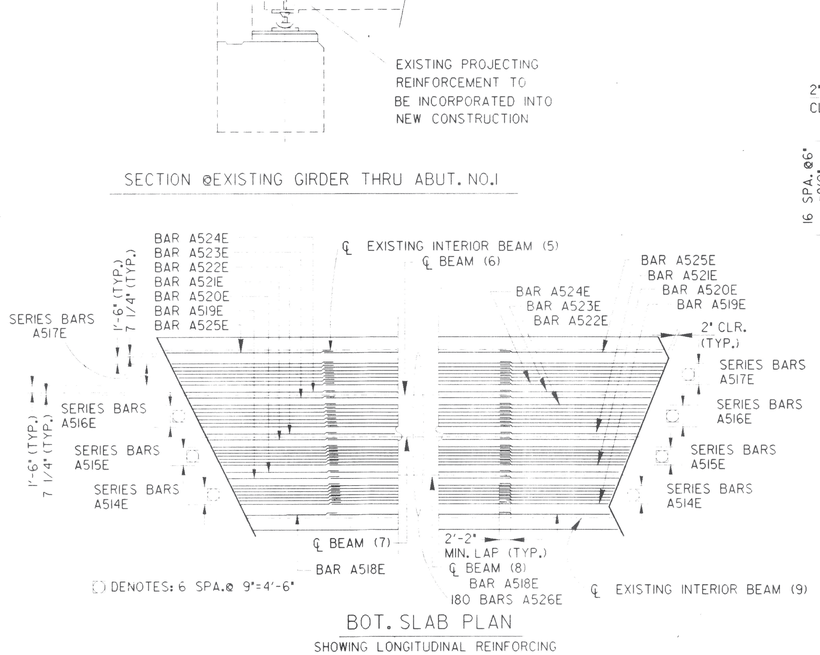
PLAN OF REINFORCING (EXISTING BEAM 9,10,11,&12)



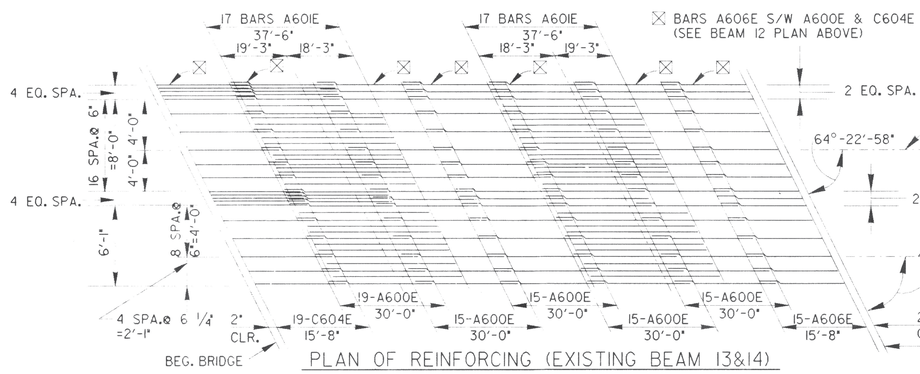
SECTION @NEW GIRDER AT ABUT. NO.2



SECTION AT END OF EXISTING BRIDGE



BOT. SLAB PLAN
SHOWING LONGITUDINAL REINFORCING



PLAN OF REINFORCING (EXISTING BEAM 13&14)

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS
WIDENING OF STRUCTURES 2 & 2A
I-40 OVER L&N RAILROAD
STATION 313+95.96
DAVIDSON COUNTY
1984

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	BWS&C CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

CORRECT Gladden L. Loveall
ENGINEER OF STRUCTURES

APPROVED Lewis Evans
DIRECTOR OF HIGHWAYS

M-144-81

CONST. NO. 19003-3149-44

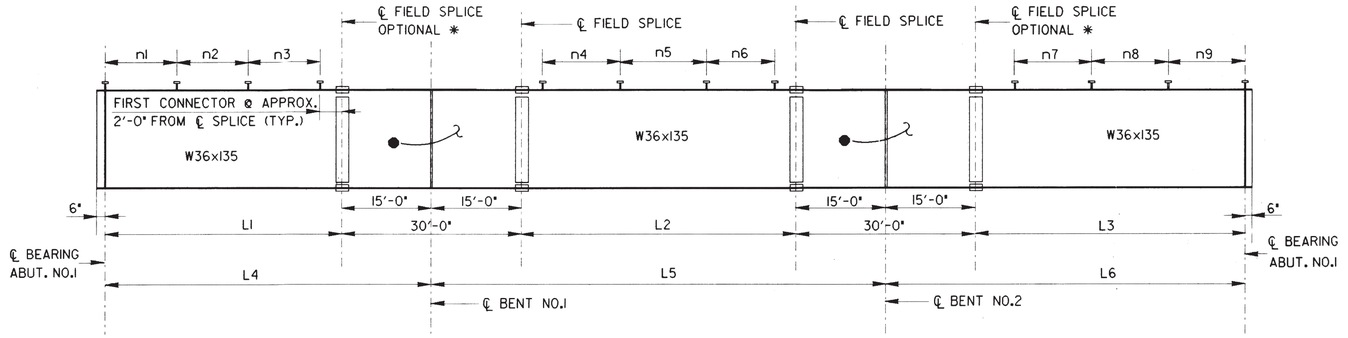
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

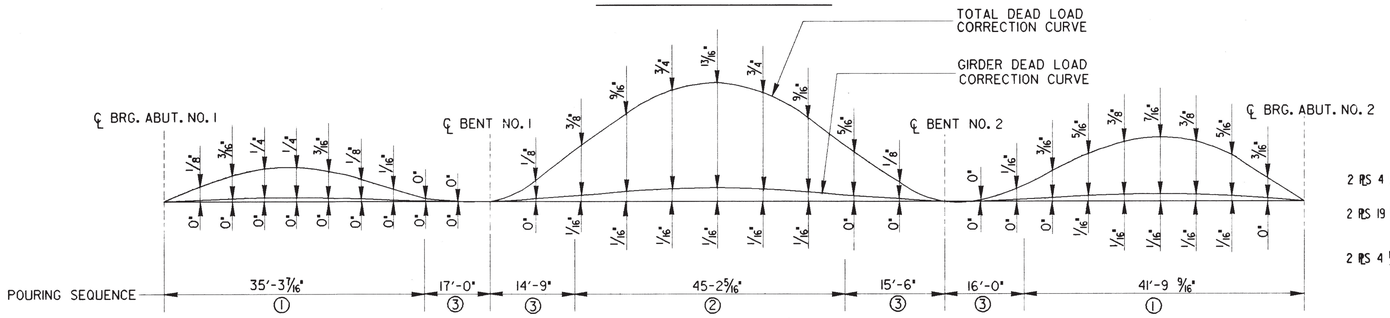
NO.	DATE	BY	BRIEF DESCRIPTION
1	2-25-85	HVB	Shear Connector Spacing

* IF OPTIONAL FIELD SPLICES ARE OMITTED, THE SECTION DESIGNATED FOR USE OVER BENTS SHALL BE USED FOR THE ENTIRE END SPANS IN LIEU OF THE W36x135'S. ANY ADDITIONAL EXPENSE DUE TO OMITTING FIELD SPLICES SHALL BE BORNE BY THE CONTRACTOR.

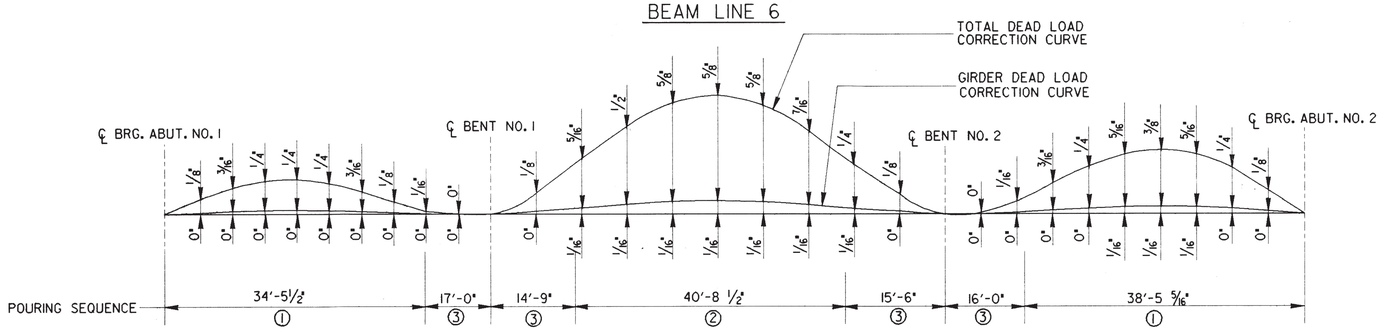
● DENOTES W36x182 FOR BEAM LINE 6,
W36x160 FOR BEAM LINE 7,
W36x150 FOR BEAM LINE 8.



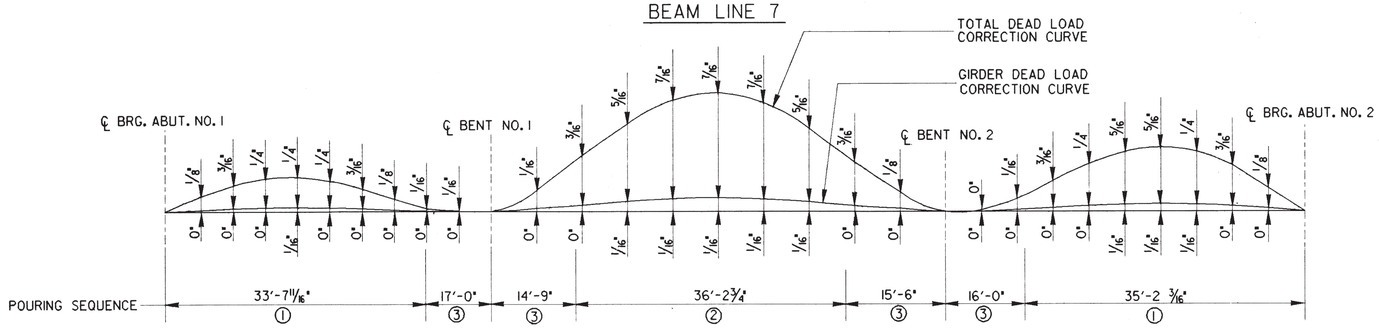
TYP. BEAM ELEVATION



BEAM LINE 6



BEAM LINE 7



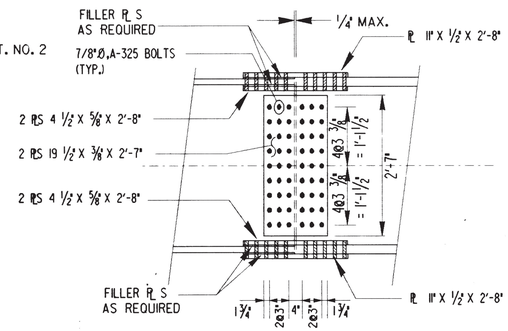
BEAM LINE 8

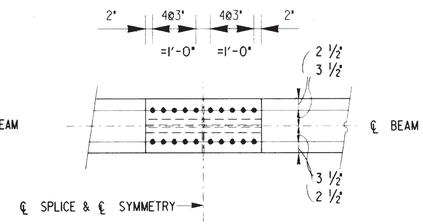
DEAD LOAD CORRECTION DIAGRAM AND POURING SEQUENCE

NOTE: GIRDERS SHALL BE CAMBERED TO COMPENSATE FOR DEAD LOAD DEFLECTION AND VERTICAL CURVE

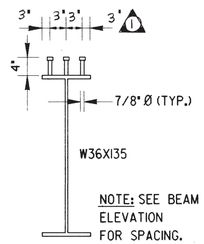
BEAM TABLE

							SHEAR CONNECTOR SPACING								
BEAM LINE	L 1	L 2	L 3	L 4	L 5	L 6	n 1	n 2	n 3	n 4	n 5	n 6	n 7	n 8	n 9
6	37'-3 7/16"	45'-5 5/16"	42'-9 5/16"	52'-3 7/16"	75'-5 5/16"	57'-9 5/16"	13@9"	25@11"	6@5 1/4"	6@5 3/4"	39@11"	6@5 3/4"	6@6"	28@11"	16@9"
7	36'-5 1/2"	40'-11 1/2"	39'-5 5/16"	51'-5 1/2"	70'-11 1/2"	54'-5 5/16"	13@9"	24@11"	6@5 1/2"	6@5 3/4"	34@11"	6@5 3/4"	6@5 1/8"	25@11"	16@9"
8	35'-7 11/16"	36'-5 3/4"	36'-2 5/16"	50'-7 11/16"	66'-5 3/4"	51'-2 5/16"	13@9"	23@11"	6@5 1/2"	6@5 3/4"	28@11"	6@5 3/4"	6@5 7/8"	21@11"	16@9"





FIELD SPLICE DETAILS



NOTE: SEE BEAM ELEVATION FOR SPACING.

TYPICAL SHEAR CONNECTOR DETAIL

STRUCTURAL STEEL NOTES

1. APPROVAL OF MATERIALS: NO FABRICATION SHALL BE STARTED UNTIL THE MATERIALS INVOLVED HAVE BEEN APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.
2. IDENTITY OF MAIN MATERIALS: SEE SPECIAL PROVISION NO. 602.
3. STRUCTURIAL STEEL: SHALL CONFORM TO AASHTO M183 (ASTM A36) UNLESS OTHERWISE NOTED. ALL STRUCTURAL STEEL FOR GIRDER FLANGES IN TENSION AND ALL WEBS SHALL MEET THE SUPPLEMENTAL REQUIREMENTS FOR LONGITUDINAL CHARPEY V-NOTCH TESTS SPECIFIED IN AASHTO MATERIAL SPECIFICATIONS. ZONE 2 OF TABLE S 1 SHALL APPLY. STRUCTURAL STEEL DESIGNATED ON THE PLANS AS FRACTURE CRITICAL SHALL MEET THE REQUIREMENTS OF AASHTO GUIDE SPECIFICATIONS FOR FRACTURE CRITICAL NON-REDUNDANT STEEL BRIDGE MEMBERS AS REQUIRED FOR ZONE 2.
4. WELDING: AWS DI. 1-80 STRUCTURAL WELDING CODE, AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, THIRD EDITION, 1981, AND SPECIAL PROVISION NO. 602.
5. FIELD CONNECTIONS: SHALL BE 7/8" Ø HIGH TENSILE STRENGTH BOLTS ASTM A325 (OR ASTM A490) UNLESS OTHERWISE SHOWN. SEE AASHTO SPECIFICATIONS ART. 2.10.20. ALL HIGH STRENGTH BOLTED CONNECTIONS ARE FRICTION TYPE.
6. UNLESS OTHERWISE NOTED, SEE AASHTO SPECIFICATIONS ART. 1.7.21 FOR MINIMUM SIZE OF FILLET WELDS.
7. SHOP ASSEMBLY: PROGRESSIVE SHOP ASSEMBLY WILL BE ALLOWED. SEE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, ART. 2.10.14 (b).

NOTE: THE SLAB SHALL NOT BE POURED UNTIL ALL STRUCTURAL STEEL IS ERECTED AND ALL WELDING OR BOLTING COMPLETE. ALL POURS ARE TO BE MADE IN NUMERICAL SEQUENCE. POUR NO. 1 SHALL PROCEED IN A DIRECTION FROM MID-SPAN TO THE ABUTMENT. POURS WITH THE SAME NUMERICAL DESIGNATION MAY BE MADE SIMULTANEOUSLY. THE CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS DURING PLACEMENT OF SLAB TO PREVENT THE EXTERIOR BEAM FROM TWISTING. NO PORTION OF THE MEDIAN BARRIER SHALL BE POURED UNTIL THE ENTIRE SLAB IS IN PLACE.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

STRUCTURAL STEEL DETAILS
WIDENING OF STRUCTURES 2 & 2A
I-40 OVER L&N RAILROAD
STATION 313+95.96
DAVIDSON COUNTY
1984

DESIGNED BY W.A.P. DATE 1/84
DRAWN BY CAD/D DATE 1/84
SUPERVISED BY S.S.P. DATE 1/84
CHECKED BY DATE

CORRECT Sheldon L Loveall
ENGINEER OF STRUCTURES
APPROVED Louis Brown
DIRECTOR OF HIGHWAYS

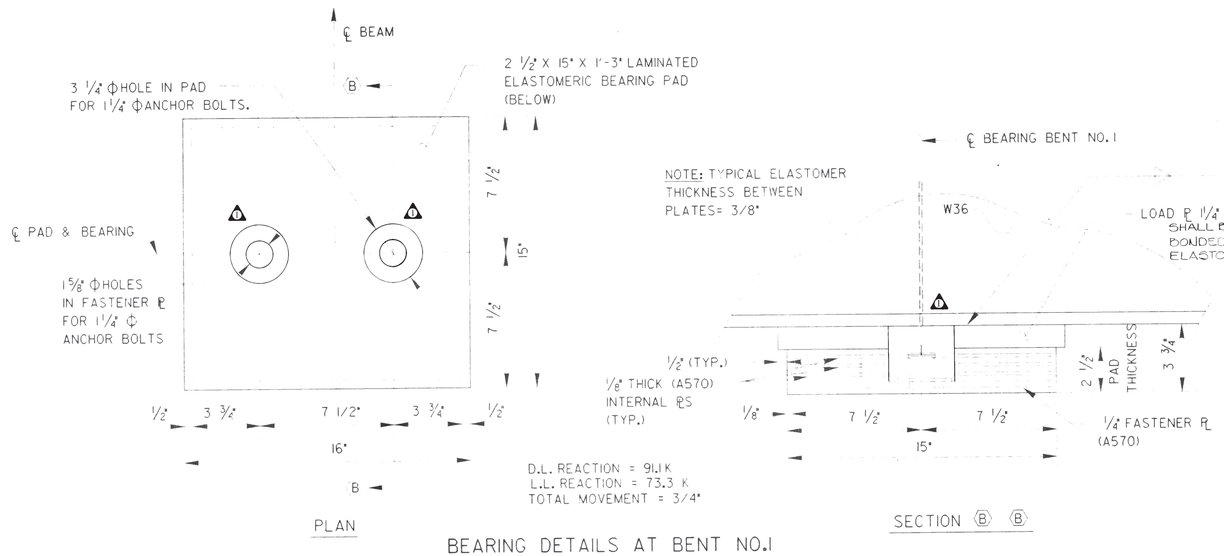
M-144-82

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

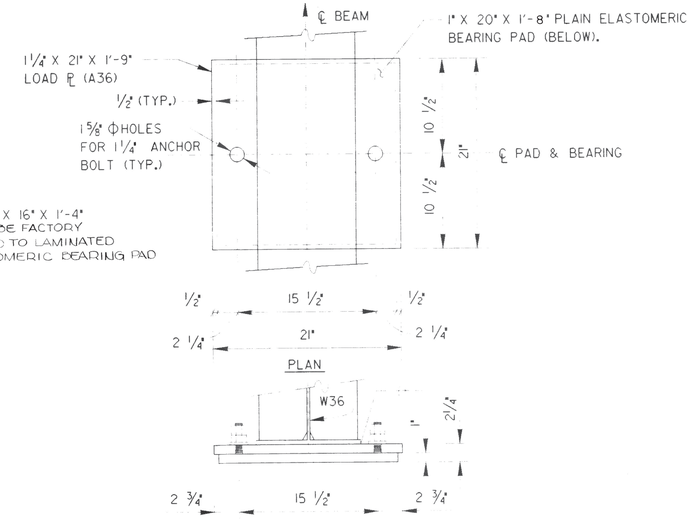
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	2/13/85	W.A.P.	REVISED BEARING DEVICE DETAILS

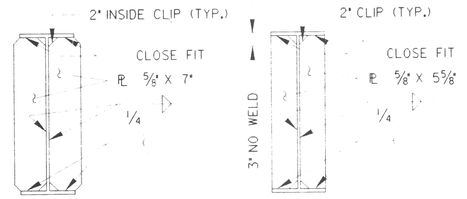


BEARING DETAILS AT BENT NO.1

NOTE: CONTRACTOR MAY SUBMIT ALTERNATE LAMINATED BEARING DEVICES DESIGNED IN ACCORDANCE WITH AASHTO SPECIFICATIONS.

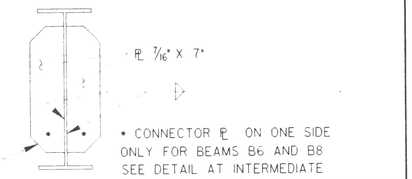


BEARING DETAILS AT BENT NO. 2



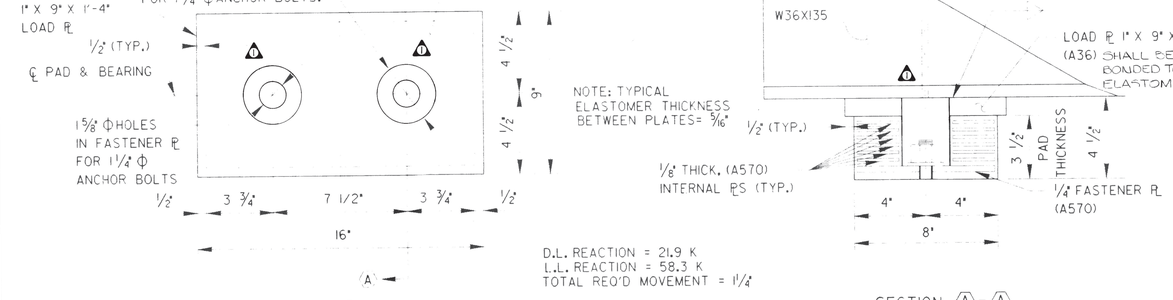
BEARING STIFFENER AT ABUTMENTS

BEARING STIFFENER AT BENTS

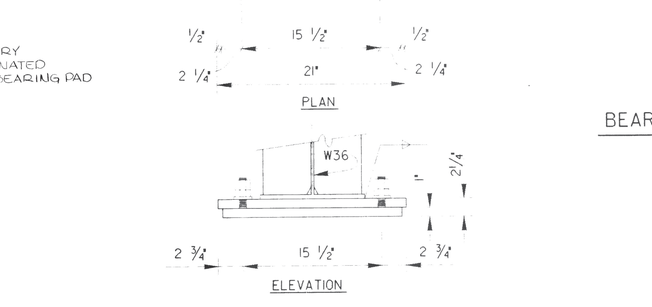


CONNECTOR PLATE AT INTERMEDIATE DIAPHRAGMS

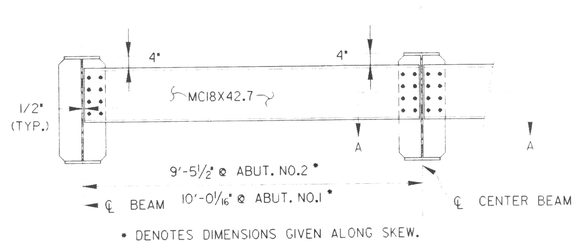
BEARING STIFFENER AND CONNECTOR PLATE DETAILS



BEARING DETAILS @ ABUT. NO.1

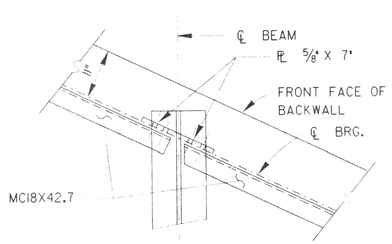


BEARING DETAILS AT ABUT. NO.2



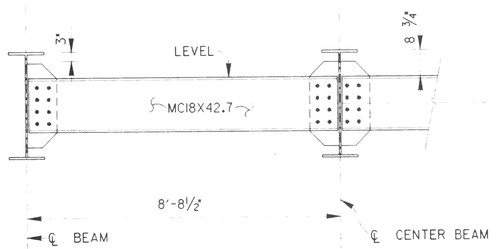
DETAIL AT END DIAPHRAGM

(LOOKING FORWARD ON SURVEY)



SECTION A-A

(SHOWN AT ABUT. NO. 1- ABUT. NO. 2 SIMILAR)



DETAIL AT INTERMEDIATE DIAPHRAGM

(LOOKING FORWARD ON SURVEY)

DESIGNED BY W.A.P. DATE 1/84
DRAWN BY BWS&C CAD/D DATE 1/84
SUPERVISED BY S.S.P. DATE 1/84
CHECKED BY DATE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BEARING DEVICE AND DIAPHRAGM DETAILS WIDENING OF STRUCTURES 2 & 2A I-40 OVER L&N RAILROAD STATION 313+95.96 DAVIDSON COUNTY 1984

CORRECT Charles L Forcade
ENGINEER OF STRUCTURES

APPROVED Louis Burns
DIRECTOR OF HIGHWAYS

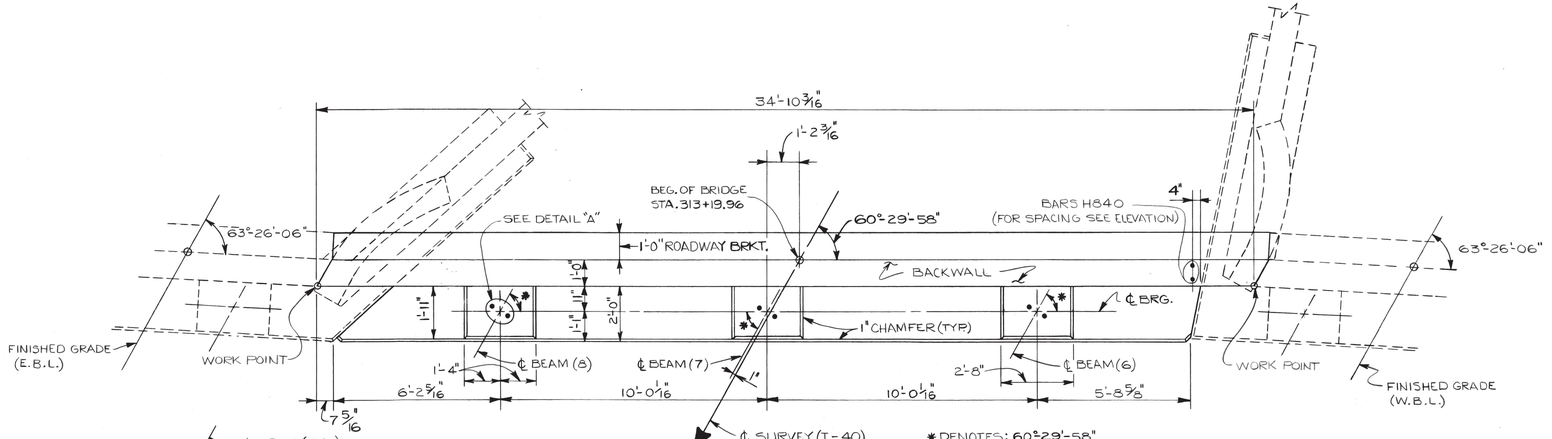
M-144-83

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(69)204	1984	

REVISIONS

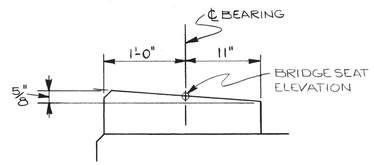
NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

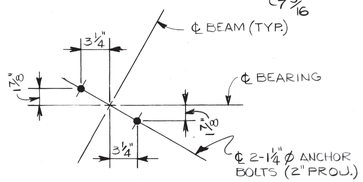
NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM. THE BACKWALL SHALL NOT BE POURED UNTIL THE GIRDERS ARE IN PLACE. THE TOP 12" OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.

NOTE: *When pouring abutment beam, provisions shall be made for setting anchor bolts. If the contractor elects to drill the holes for the anchor bolts, the reinforcing steel shall be placed so as not to interfere with the drilling. Bolt projection 2".*



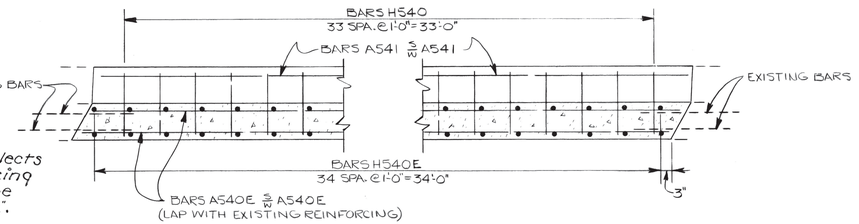
RISER BLOCK SLOPE DETAIL

RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

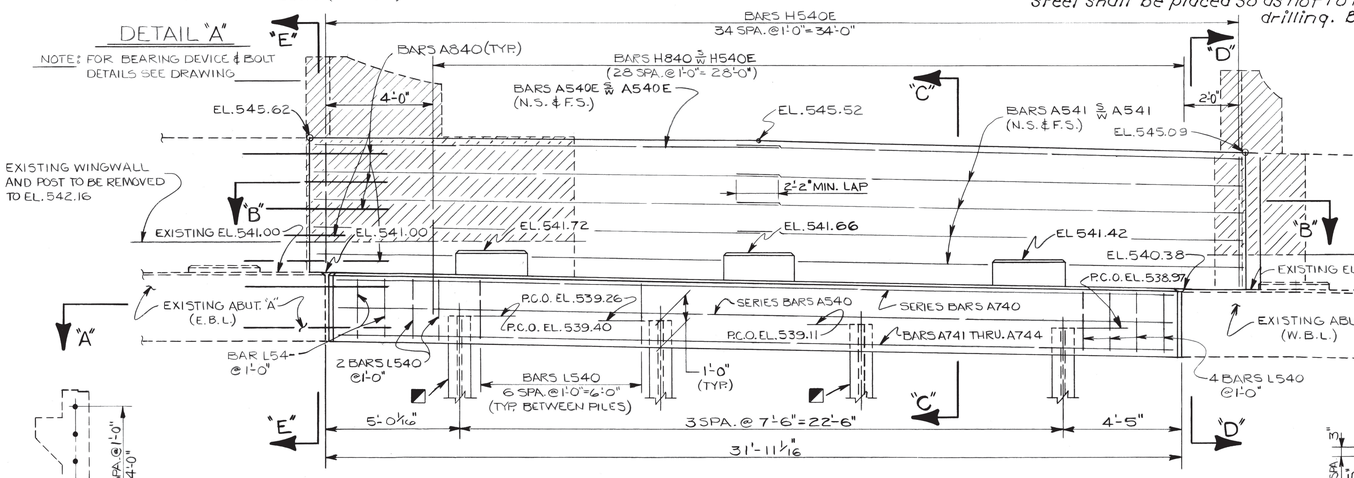


DETAIL "A"

NOTE: FOR BEARING DEVICE ℄ BOLT DETAILS SEE DRAWING



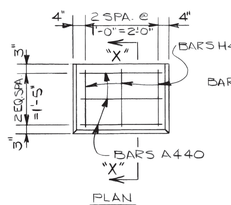
SECTION "B"-"B"



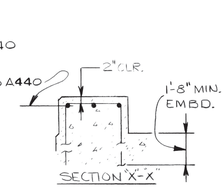
■ DENOTES: BATTER THESE PILES FORWARD ON ABUTMENT AT 2:12

ELEVATION
(LOOKING BACK ON SURVEY)

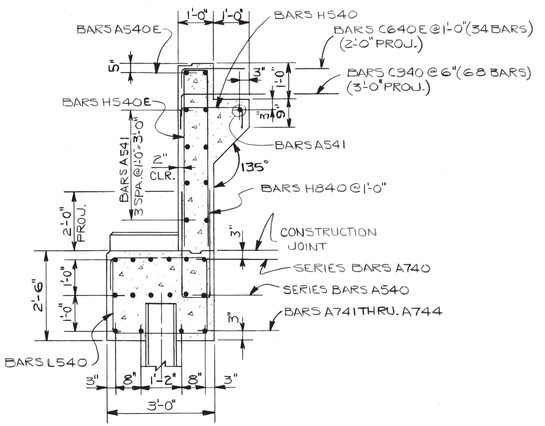
NOTE: N.S. = NEAR SIDE
F.S. = FAR SIDE



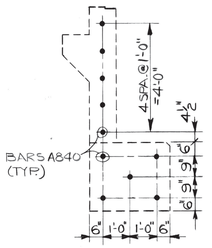
PLAN



RISER BLOCK REINFORCING DETAILS
(TYP. ALL RISERS)

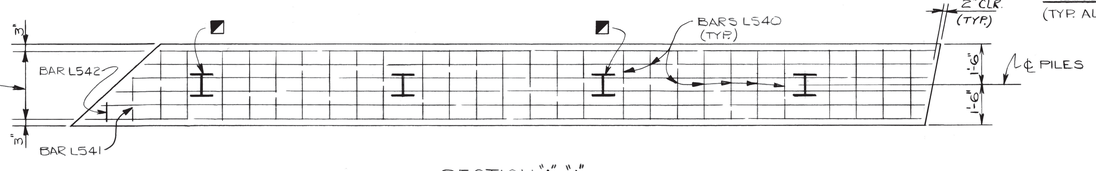


SECTION "C"-"C"



NOTE: DRILL & GROUT BARS A840, 2'-6" INTO EXISTING ABUTMENTS.

SECTION "D"-"D"
(SECTION "E"-"E" SAME EXCEPT OPP. HAND)



SECTION "A"-"A"

ESTIMATED QUANTITIES

ITEM	CONCRETE CLASS 'A' C.Y.	REINFORCING STEEL LBS.	EPOXY COATED REINFORCING STEEL LBS.
ABUTMENT 1	10.7	3705	605

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT 1
WIDENING OF STRUCTURES 2+2A
I-40 OVER L&N RAILROAD
STATION 313+95.96
DAVIDSON COUNTY
1984

DESIGNED BY	WRP	DATE	2/84
DRAWN BY	SK	DATE	2/84
SUPERVISED BY	SSP	DATE	2/84
CHECKED BY		DATE	

CORRECT Charlton P. Loveall
ENGINEER OF STRUCTURES

APPROVED Lewis Evans
DIRECTOR OF HIGHWAYS

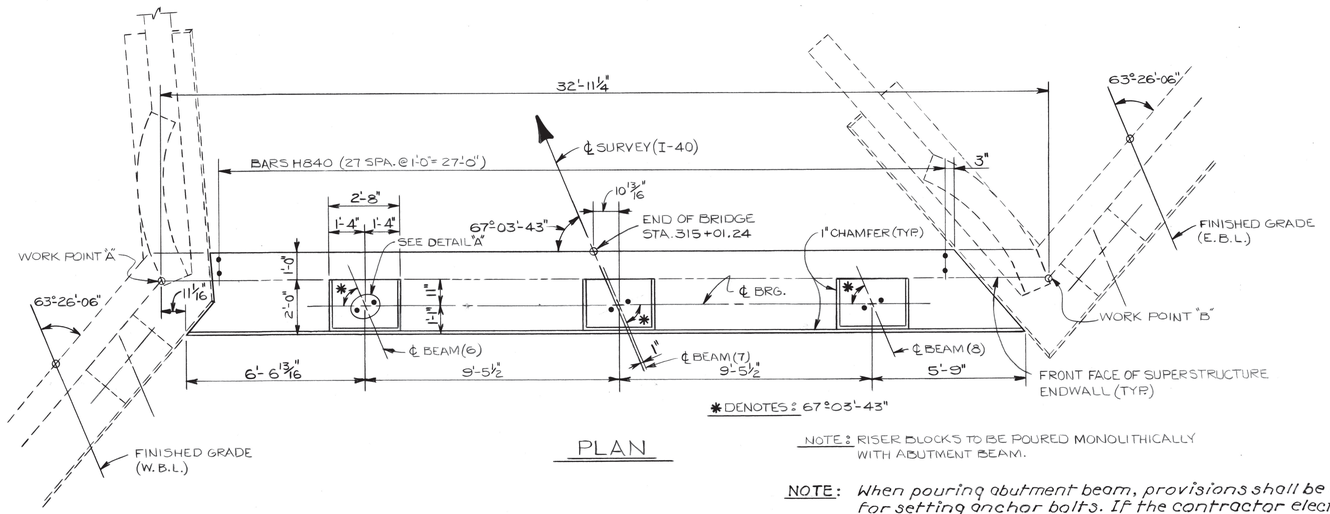
M-144-84

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

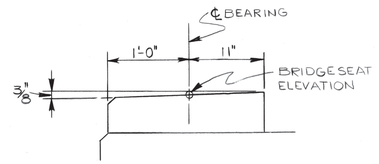
NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

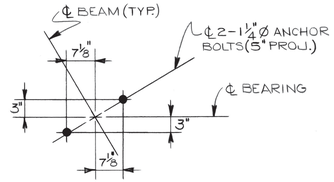
NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

NOTE: *When pouring abutment beam, provisions shall be made for setting anchor bolts. If the contractor elects to drill the holes for the anchor bolts, the reinforcing steel shall be placed so as not to interfere with the drilling. Bolt projection 5".*



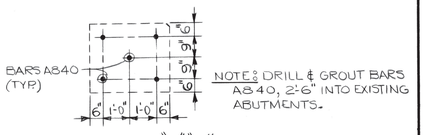
RISER BLOCK SLOPE DETAIL

RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.



DETAIL "A"

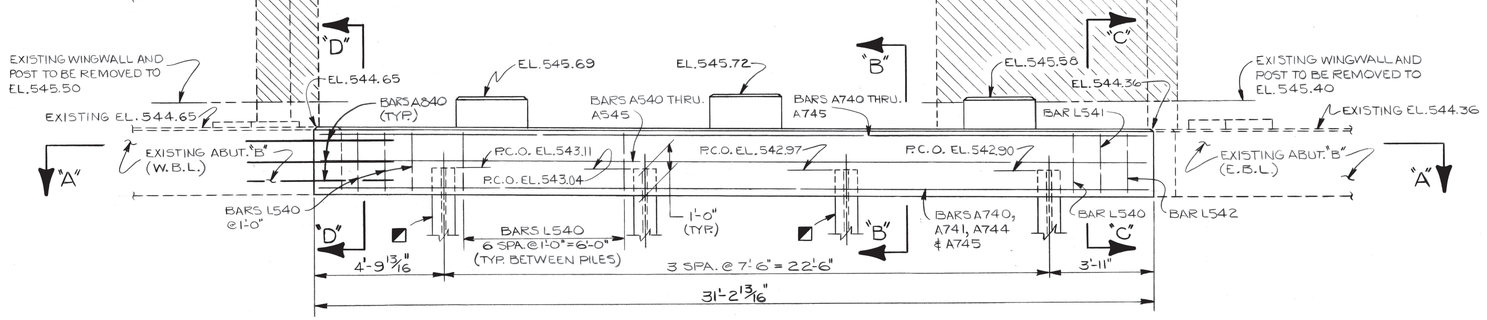
NOTE: FOR BEARING DEVICE & BOLT DETAILS SEE DRAWING _____



NOTE: DRILL & GROUT BARS A840, 2'-6" INTO EXISTING ABUTMENTS.

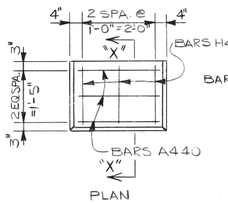
SECTION "C"-"C"

(SECTION "D"-"D" SAME EXCEPT OPP. HAND.)

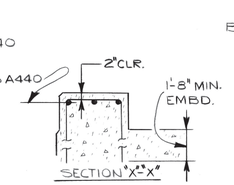


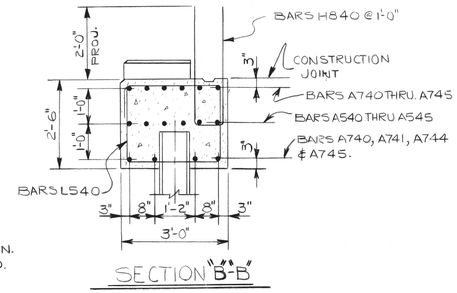
ELEVATION

(LOOKING FORWARD ON SURVEY)



PLAN

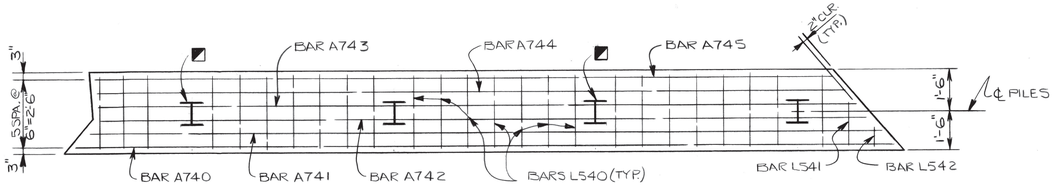




SECTION "B"-"B"

RISER BLOCK REINFORCING DETAILS

(TYP. ALL RISERS)



SECTION "A"-"A"

ESTIMATED QUANTITIES

ITEM	CONCRETE CLASS "A" C.Y.	REINFORCING STEEL LBS.
ABUTMENT 2	6.8	1,796

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT 2
WIDENING OF STRUCTURES 2+2A
I-40 OVER L&N RAILROAD
STATION 313+95.96
DAVIDSON COUNTY
1984

DESIGNED BY	WAP	DATE	2/84
DRAWN BY	SK	DATE	2/84
SUPERVISED BY	SSP	DATE	2/84
CHECKED BY		DATE	

CORRECT Sheldon L Loveall
ENGINEER OF STRUCTURES

APPROVED Lewis Evans
DIRECTOR OF HIGHWAYS

M-144-85

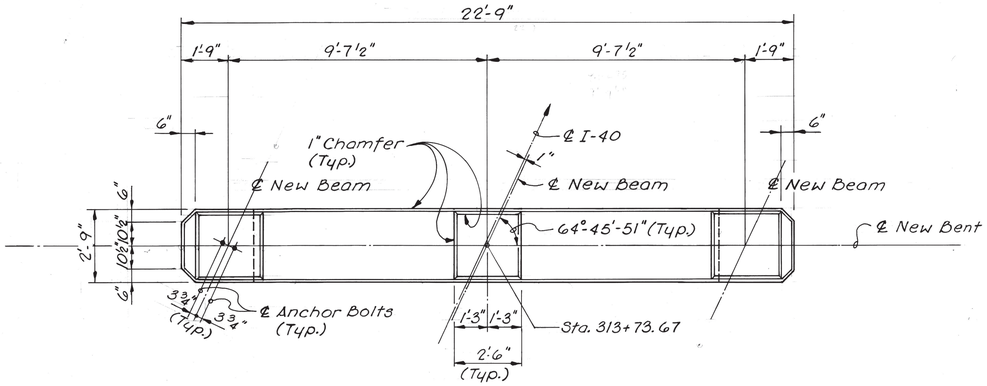
SCANNED

CONST. NO. 19003-3149-44

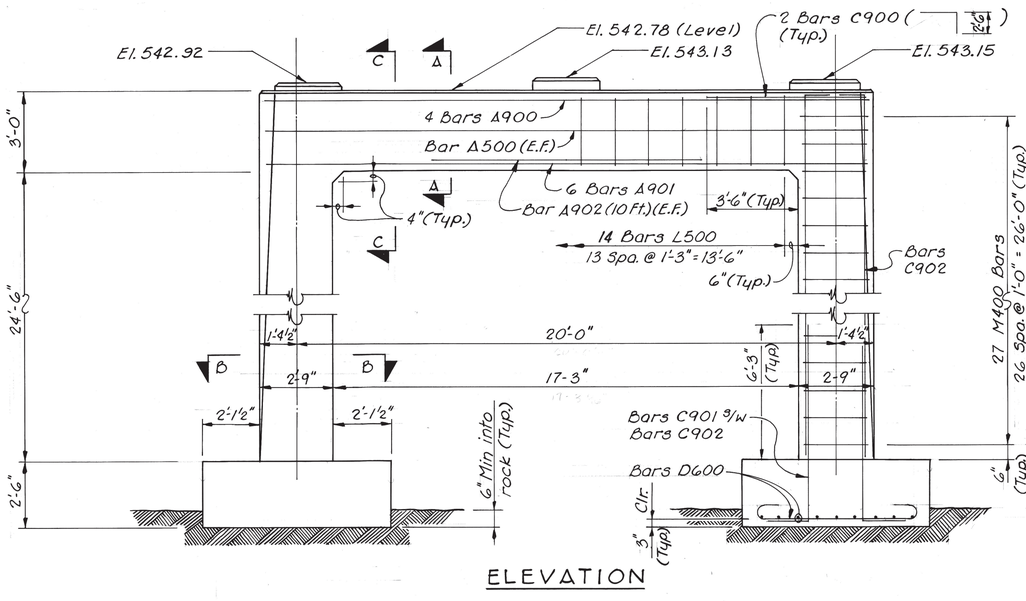
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

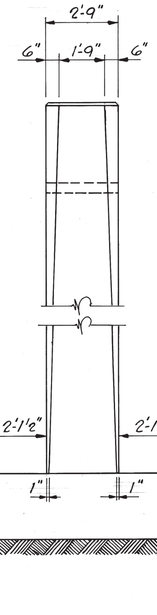
NO.	DATE	BY	BRIEF DESCRIPTION



PLAN



ELEVATION



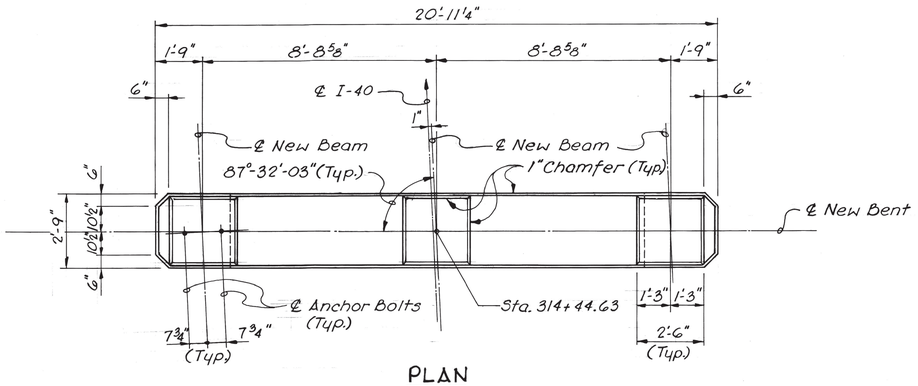
TYP. END ELEVATION

CONST. NO. 19003-3149-44

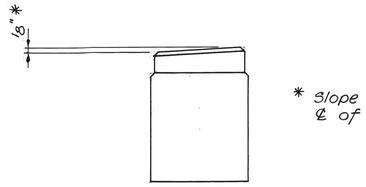
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



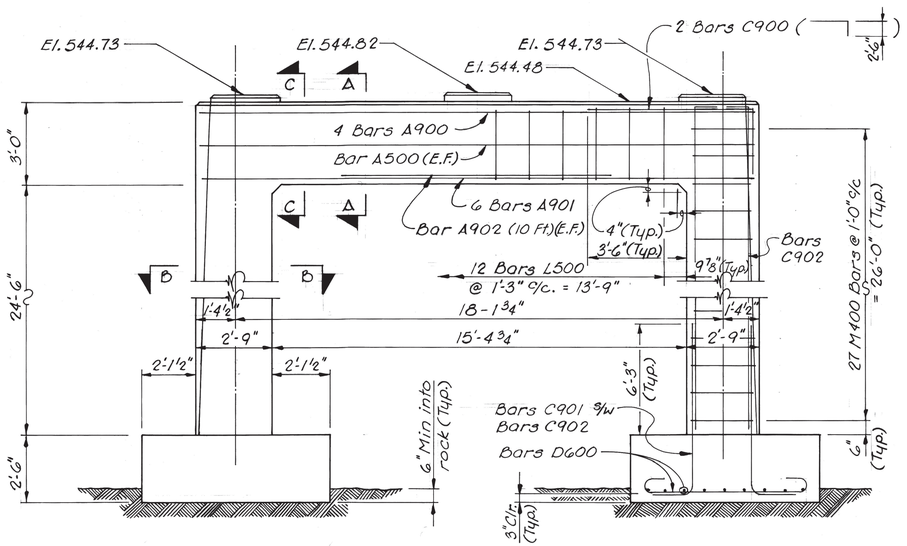
PLAN



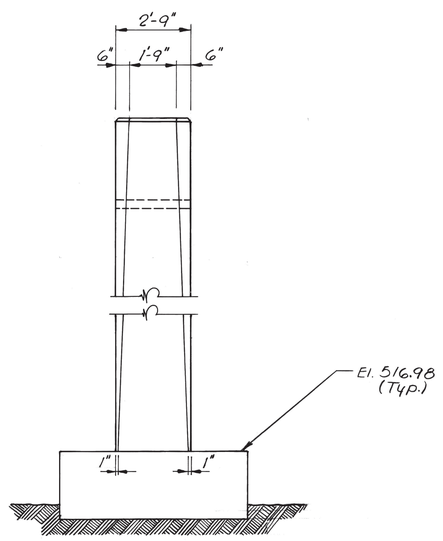
* Slope shown is along ℄ of beam.

Direction of Survey

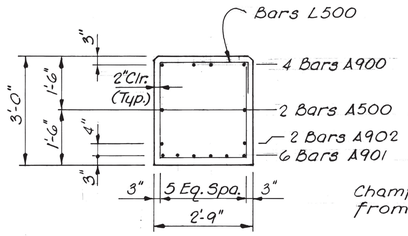
RISER BLOCK SLOPE DETAIL



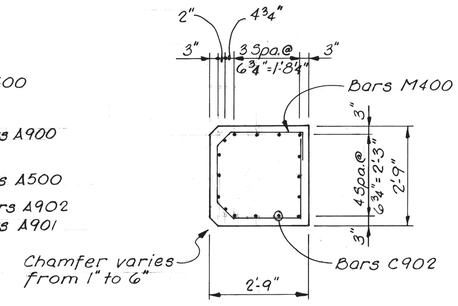
ELEVATION



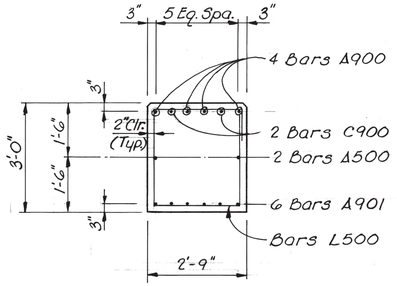
TYP. END ELEVATION



SECTION A-A



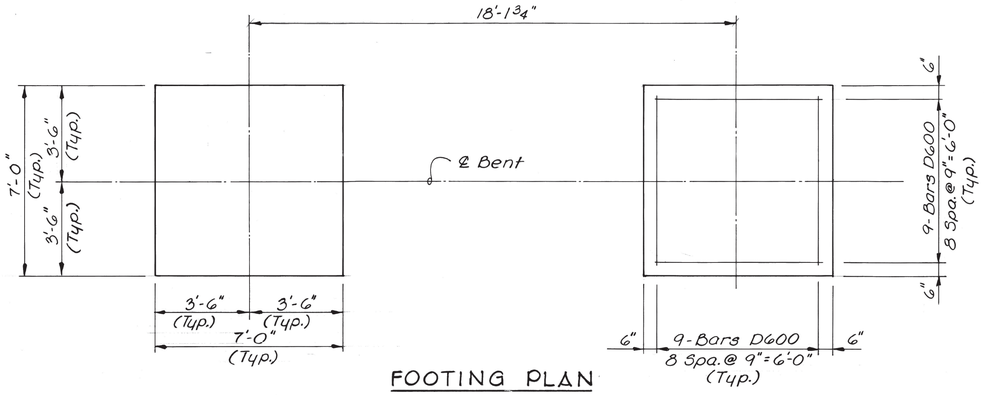
SECTION B-B



SECTION C-C

NOTES:

1. When pouring bent cap, provisions shall be made for setting anchor bolts for bearing plates. If the contractor elects to drill holes for the anchor bolts, the reinforcing steel shall be placed so as not to interfere with drilling. Anchor bolt projection: 8".
2. Reinforcing steel to extend a minimum of 2'-6" into cap beam and shall not be ordered until the final footing elevations have been determined.
3. Bottom of footing to be a minimum of 6" into rock.
4. Riser blocks to be poured monolithically with cap beam.



FOOTING PLAN

ESTIMATED QUANTITIES

CONCRETE CLASS "A" CU. YDS.	REINFORCING STEEL LBS.
29.5	6,089

DESIGNED BY W.A.P. DATE 1/84
DRAWN BY E.H. DATE 1/84
SUPERVISED BY S.S.R. DATE 1/84
CHECKED BY DATE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BENT No. 2

Widening of Structures 2 & 2A
I-40 Over L&N Railroad
Station 313+95.96
Davidson County
1984

CORRECT Charles L Loveall
ENGINEER OF STRUCTURES

APPROVED Louis Evans
DIRECTOR OF HIGHWAYS

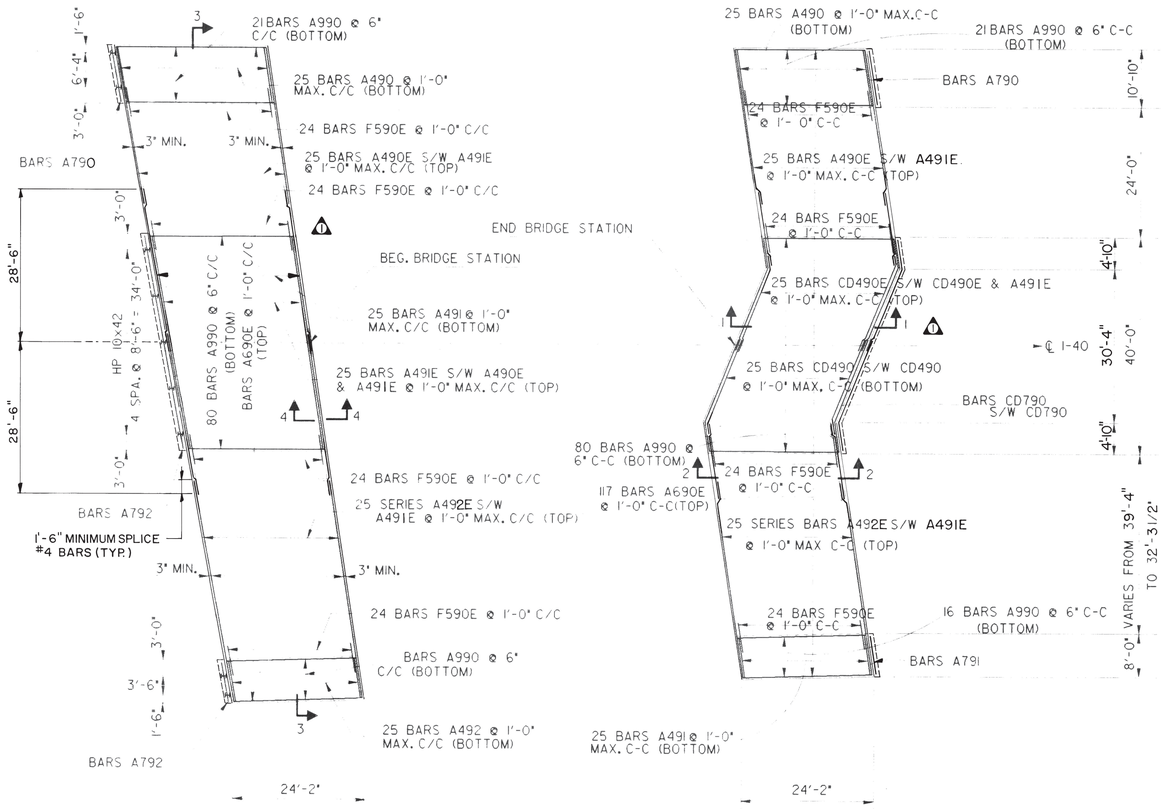
M-144-87

CONST. NO. 19003-3149-44

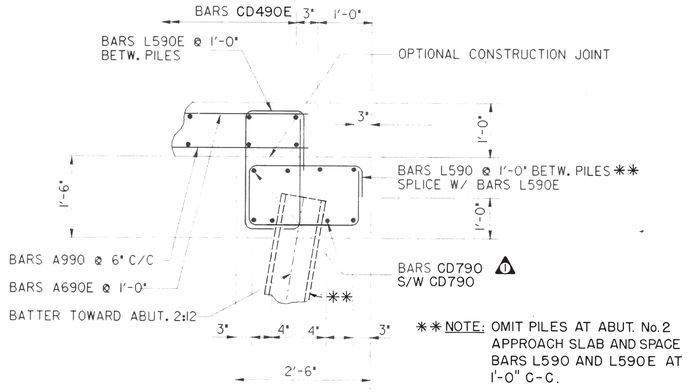
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	2/14/85	W.A.P.	SPLICE LOCATION FOR PHASED CONSTR. AND OTHER GENERAL REVISIONS

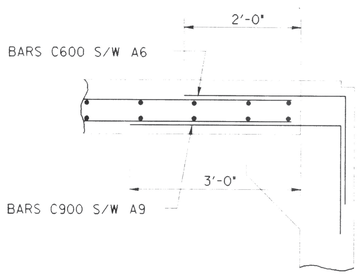


APPROACH SLAB PLAN

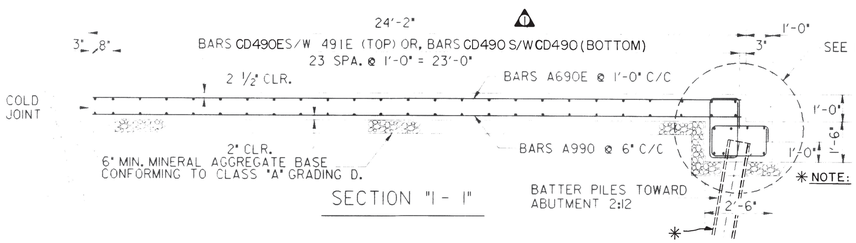


** NOTE: OMIT PILES AT ABUT. No. 2 APPROACH SLAB AND SPACE BARS L590 AND L590E AT 1'-0" C-C.

DETAIL "A"

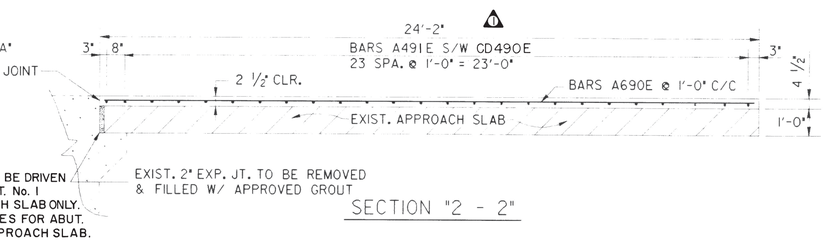


SECTION "4 - 4"
(APPLICABLE TO ABUT. No. 1 ONLY)

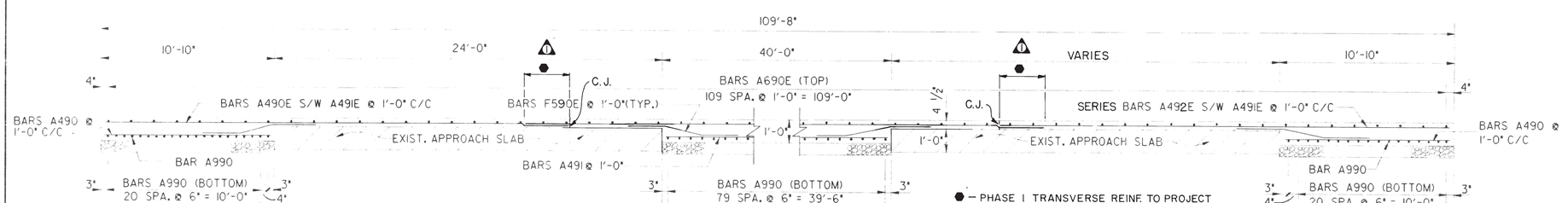


SECTION "1 - 1"

* NOTE: PILES TO BE DRIVEN FOR ABUT. No. 1 APPROACH SLAB ONLY. OMIT PILES FOR ABUT. No. 2 APPROACH SLAB.



SECTION "2 - 2"



● — PHASE I TRANSVERSE REINF. TO PROJECT 2'-0" MINIMUM BEYOND SLAB CONSTRUCTION JOINT.

SECTION "3 - 3"

GENERAL NOTES

1. COST OF MINERAL AGGREGATE BASE QUANTITY TO BE PAID AS ITEM 303-01 MINERAL AGGREGATE CLASS "A", GRADING D.
2. IN LIEU OF CLASS "A", GRADING D MATERAL SHOWN, CLASS "B", GRADING C OR D MAY BE USED.
3. PILES SHALL BE HP 10x42, AND SHALL HAVE A LENGTH OF 10'-0" REGARDLESS OF BEARING.
4. WHEN POURING APPROACH SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR MEDIAN BARRIER.

ESTIMATED QUANTITIES (EACH)

ITEM	CONCRETE CLASS "A" BRIDGE DECK C.Y.	REINFORCING STEEL LB.	EPOXY COATED REINF. STEEL LB.
APPROACH SLABS	151.1	17,809	15,511

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

APPROACH SLAB
WIDENING OF STRUCTURES 2 & 2A
I-40 OVER L&N RAILROAD
STATION 313+95.96
DAVIDSON COUNTY
1984

DESIGNED BY	W.A.P.	DATE 1/84
DRAWN BY	CAD/D	DATE 1/84
SUPERVISED BY	S.S.P.	DATE 1/84
CHECKED BY		DATE

CORRECT Charles L Sneed
ENGINEER OF STRUCTURES

APPROVED Louis Turner
DIRECTOR OF HIGHWAYS

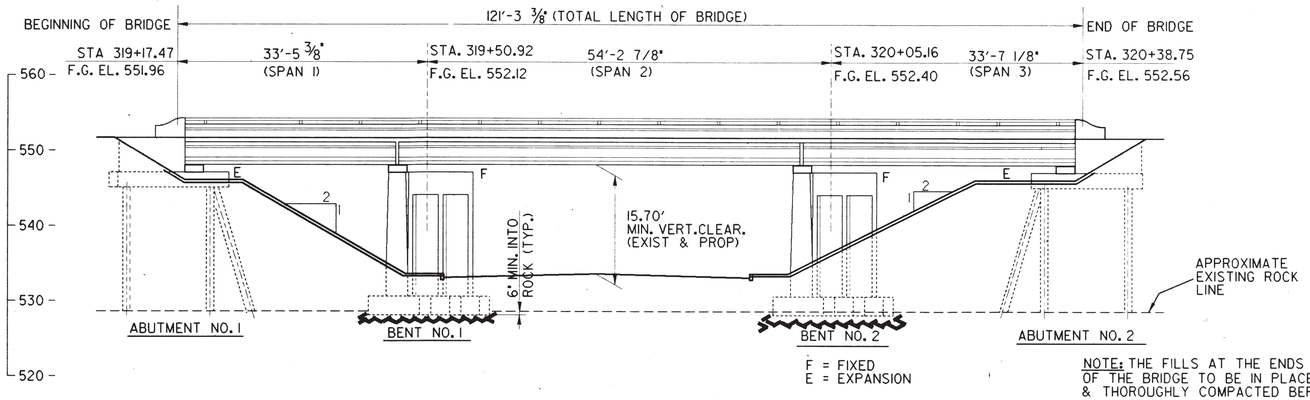
M-144-88

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

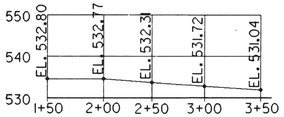
NO.	DATE	BY	BRIEF DESCRIPTION



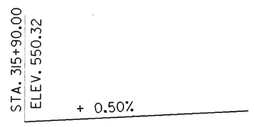
F = FIXED
E = EXPANSION

NOTE: THE FILLS AT THE ENDS OF THE BRIDGE TO BE IN PLACE & THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

ELEVATION @ RIGHT ANGLES TO ℄ SURVEY I-40



40th AVE. GRADE SKETCH



I-40 GRADE SKETCH

(ELEVATIONS SHOWN ARE BASED ON FINISHED GRADES.)

LIST OF DRAWINGS

DWG.	DWG. NO.	LAST REV. DATE
LAYOUT OF BRIDGE	M-144-91	
GENERAL NOTES & ESTIMATED QUANTITIES	M-144-92	
SUPERSTRUCTURE	M-144-93	
SUPERSTRUCTURE DETAILS	M-144-94	
SUPERSTRUCTURE DETAILS	M-144-95	
PRESTRESSED BEAMS	M-144-96	
ABUTMENT NO. 1	M-144-97	
ABUTMENT NO. 2	M-144-98	
BENT NO. 1 & 2	M-144-99	
APPROACH SLABS	M-144-100	
BILL OF STEEL	M-144-101	

LIST OF REFERENCE DRAWINGS

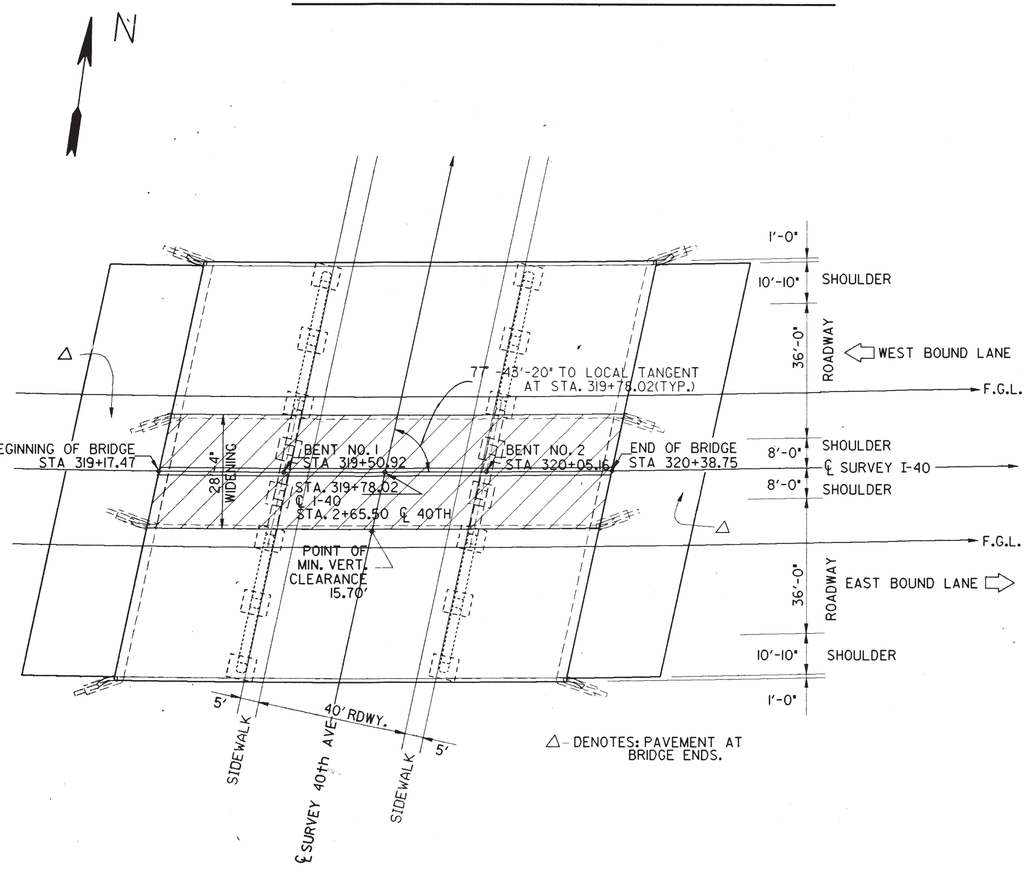
	DWG. NO.
GENERAL PLAN & ELEVATION	K-66-19
ABUTMENT "A" E.B.L. & W.B.L.	K-66-20
ABUTMENT "B" E.B.L. & W.B.L.	K-66-21
ABUTMENT DETAILS	K-66-22
PIERS & DETAILS	K-66-23
SUPERSTRUCTURE & DETAILS	K-66-24
PRESTRESSED BEAMS & DETAILS	K-66-25
REINF. STEEL SCHEDULE	K-66-26
PAVEMENT AT BRIDGE ENDS	P-R-6

LIST OF STANDARD DRAWINGS

DWG.	DWG. NO.	LAST REV. DATE
STD. REINFORCING BAR SUPPORT DETAILS	K-80-14	8-27-76
MISCELLANEOUS ABUTMENT & DRAINAGE DETAILS	K-85-150	1-9-75
STD. PORTABLE BARRIER RAIL	K-38-158	7-17-81
STD. PILE DETAILS	H-5-111	11-12-82
SLOPE PROTECTION	RD-SA-1	1-11-82
PRECAST PRESTRESSED BRIDGE DECK PANELS	M-103-149&150	4-21-83

LIST OF SPECIAL PROVISIONS

NO.	TITLE	LAST REV. DATE
907A	REGARDING EPOXY COATED REINFORCING STEEL	4-18-83
604A	REGARDING CLASS "A" CONC. FOR BRIDGE DECKS	12-20-82
105A	REGARDING APPROVAL OF SHOP DRAWINGS	9-8-81



△ - DENOTES: PAVEMENT AT BRIDGE ENDS.

PLAN

I-40 HORIZONTAL CURVE DATA

Δ = 16° 46' 10"
D = 1.25°
T = 675.61'
L = 1341.56'
R = 4583.66'



109'-8" ROADWAY WITH EXISTING CONCRETE RAIL
EST. 2005 A.D.T.=97,000

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

LAYOUT OF BRIDGE
WIDENING OF STRUCTURES 3 & 3A
I-40 OVER 40th AVENUE
STATION 319+78.02
DAVIDSON COUNTY
1984

DESIGNED BY W.A.P. DATE 1/84
DRAWN BY BWS&C CAD DATE 1/84
SUPERVISED BY S.S.P. DATE 1/84
CHECKED BY DATE

CORRECT Edelon L Loveall ENGINEER OF STRUCTURES
APPROVED Louis Burns DIRECTOR OF HIGHWAYS

M-144-91

SEE M-314-71 (WID.)

CLASS "A" GRADING "D" 64 C.Y.

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ITEM NO.	202-04.06	204-02.01	204-04.01	204-05	604-01.12	604-02.03	604-03.01	604-03.02	604-03.03	604-04.01	604-04.02	604-36	604-10.30	604-10.50	606-02.03
	REMOVAL OF STRUCTURES L.S. ⑤	DRY EXCAVATION BRIDGES C.Y. ①	ROCK EXCAVATION (BRIDGES) C.Y.	ROCK DRILLING (BRIDGES) L.F.	CLASS 'A' CONCRETE (BRIDGE DECK) (C.Y.)	EPOXY COATED REINFORCING STEEL LB.	CLASS 'A' CONCRETE (BRIDGES) (C.Y.)	STEEL BAR REINFORCEMENT (BRIDGES) LB.	LINSEED OIL TREATMENT S.Y.	APPLIED TEXTURE FINISH (NEW STRUCTURES) S.Y.	APPLIED TEXTURE FINISH (EXIST. STRUCTURES) S.Y.	SCARIFYING S.Y.	BRIDGE DECK REPAIRS (FULL DEPTH OF SLAB) S.Y. ⑧	BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB) S.Y. ⑧	STEEL PILES (10 INCH) L.F.
SUPERSTRUCTURE					248.7	59,657	14.3	1,454							
ABUTMENT NO. 1		16					6.5	1,112							88
BENT NO. 1		38	8	12			27.1	4,154							
BENT NO. 2		41	8	12			26.4	4,129							69
ABUTMENT NO. 2		16					6.5	1,112							180
PAV'MT @ BR. ENDS						14,352	160.2	25,406							337
TOTAL	L.S.	111	16	24	248.7	74,009	241.0	37,367	2,068	519	1,899	1,261	1	126	

ITEM NO.	615-01.02	705-08.03	710-10	710-11
	PRESTRESSED CONCRETE I-BEAM (TYPE II) L.F. ③	REINFORCED CONCRETE MEDIAN BARRIER (BRIDGES) L.F. ⑥	6" PERFORATED C.M. PIPE (18 GA.) WITH POROUS BACKFILL L.F. ④	6" C.M. PIPE (18 GA.) L.F.
SUPERSTRUCTURE				
ABUTMENT NO. 1			39	9
BENT NO. 1				
BENT NO. 2				
ABUTMENT NO. 2			39	9
PAV'MT @ BR. ENDS				
TOTAL	354	170	78	18

1. EXCAVATION BASED ON EXISTING GROUND.

2. THE COST OF BITUMINOUS-FIBERBOARD AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN BRIDGE ITEMS BID ON.

3. COST OF ELASTOMERIC PADS, RUBBER BONDING CEMENT AND DOWEL BARS TO BE INCLUDED IN THE COST OF PRESTRESSED BEAM.

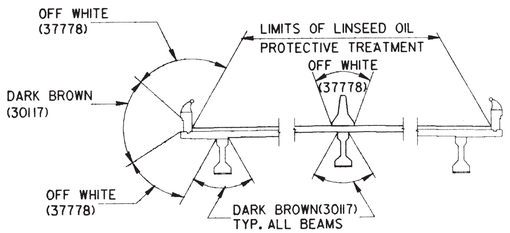
4. COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN COST OF PERFORATED C.M. PIPE.

5. THE COST OF REMOVING THE EXTERIOR PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT, AND THE BRIDGE RAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202-04.06.

6. ALL REINFORCING STEEL IN REINFORCED CONCRETE MEDIAN BARRIER SHALL BE EPOXY COATED. COST TO BE INCLUDED IN THE PRICE BID FOR ITEM 705-08.03.

7. EXISTING AREAS OF SLOPE PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR. ALL COSTS TO BE INCLUDED IN ITEMS BID ON.

8. ITEMS 604-10.50 & 604-10.30 SHALL BE BID WITH THE CONTINGENCY THAT THIS ITEM MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER. ALL PARTIAL DEPTH REPAIRS ARE TO BE MADE ONLY ON DECK SLABS THAT ARE NOT TO BE REMOVED.



APPLIED TEXTURE FINISH DETAIL

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANNDARD SPECIFICATIONS. AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS 2 FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO OFF-WHITE, FEDERAL SPECIFICATION NO. 37778, AND DARK BROWN, FEDERAL SPECIFICATION NO.30117, FEDERAL COLOR STANDARD NO. 595A AND A COLOR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. ALL EXPOSED SURFACES OF BENTS AND ABUTMENTS SHALL RECEIVE AN APPLIED TEXTURE FINISH OF OFF-WHITE. PAYMENT FOR THE APPLIED TEXTURE FINISH SHALL BE UNDER ITEM 604-04.01 OR 604-04.02.

THE REINFORCED CONCRETE MEDIAN BARRIER RAIL SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON DRAWING M-144-93 AND SHALL BE GIVEN AN APPLIED TEXTURE FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO OFF-WHITE, FEDERAL SPECIFICATION NO. 37778. THE COST OF THE FINISH AND REINFORCING STEEL DETAILED SHALL BE INCLUDED IN THE LINEAR FOOT PRICE BID FOR THE MEDIAN RAIL.

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH, 1981 EDITION)

LOADING: HS20-44 WITH ALTERNATE MILITARY

DESIGN SPECIFICATIONS: AASHTO 1977 EDITION WITH ADDENDA

CONCRETE: TO BE CLASS 'A' (CAST IN PLACE). f'_c = 3000 PSI UNLESS OTHERWISE NOTED.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO SUPPORT MEMBERS. THE CONTRACTOR SHALL TAKE STEPS TO ASSURE THE STABILITY OF THE EXTERIOR GIRDER AGAINST TWISTING OR OVERTURNING DURING SLAB POURING OPERATIONS.

REINFORCING STEEL: TO BE ASTM A615 GRADE 60. STANDARD CRSI HOOK DETAILS APPLY UNLESS OTHERWISE NOTED ON BILL OF STEEL. BENDING DIMENSIONS SHOWN ARE BASED ON GRADE 60. SPACING DIMENSIONS ARE CENTER TO CENTER UNLESS OTHERWISE NOTED ON DETAIL DRAWINGS. THE SUFFIX E, FOR BARS SO MARKED, DENOTES EPOXY COATED REINFORCEMENT. SEE SPECIAL PROVISION 907A.

SPECIAL NOTE FOR BRIDGE DECK CONCRETE: CLASS A CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS EXCEPT AS MODIFIED. PAYMENT WILL BE MADE UNDER ITEM 604-01.12.

SPECIAL NOTE - FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 6' DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

PILES: TO BE HP10X42 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 55 TONS.

GROUTED BARS IN DRILLED HOLES: HOLES FOR GROUTED BARS ARE TO BE DRILLED 1/2 INCH IN DIAMETER LARGER THAN THE BAR. AFTER CLEANING THE HOLE, PACK WITH GROUT AND DRIVE BAR TO ITS SEAT. APPROVED GROUTS ARE: EPITOP 100 (CELANESE COATING CO.); COLMA-DUR OR SIKASTIX 370 (SIKA CHEMICAL CORP.); FX-75 HYDRO-ESTER BONDING AGENT (FOX INDUSTRIES) AND FEL-POXY 102 (FEL-PRO BUILDING PRODUCTS, INC.)

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A

NON-PAY ITEMS: ONLY ITEMS SHOWN ON THE PROPOSAL AS PAY ITEMS WILL BE PAID FOR. COMPENSATION FOR ALL LABOR, MATERIALS, TOOL, EQUIPMENT, AND INCIDENTALS FOR THE ENTIRE CONTRACT SHALL BE INCLUDED IN THE PRICE BID FOR PAY ITEMS.

SPECIAL NOTE FOR UTILITIES: IT IS INTENDED THAT THE COST OF MATERIALS AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION OF UTILITIES SHALL BE BORNE BY OTHERS AND SHALL NOT BE PAID FOR AS A PART OF THIS CONTRACT. THE CONTRACTOR SHALL COOPERATE WITH OTHERS IN THE INSTALLATION OF UTILITIES WITH NO ADDITIONAL COMPENSATION ALLOWED THE CONTRACTOR AS A RESULT.

LINSEED OIL PROTECTIVE TREATMENT: SURFACES RECEIVING AN APPLIED TEXTURED FINISH SHALL NOT RECEIVE A LINSEED OIL TREATMENT. SEE APPLIED TEXTURE FINISH DETAIL ON THIS SHEET.

NOTE: ALL FILL SHALL BE IN PLACE PRIOR TO EXCAVATING FOR BENT FOOTINGS. AFTER CONSTRUCTING THE BENT, EXTREME CARE SHALL BE TAKEN WHEN BACKFILLING SO AS NOT TO DAMAGE OR MISALIGN THE BENT.

NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDERS

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

GENERAL NOTES AND ESTIMATED QUANTITIES
WIDENING OF STRUCTURES 3 & 3A
I-40 OVER 40TH. AVENUE
STATION 319+78.02
DAVIDSON COUNTY
1984

DESIGNED BY S.S.P DATE 1/84
DRAWN BY CAD/D DATE 1/84
SUPERVISED BY W.A.P. DATE 1/84
CHECKED BY DATE

CORRECT Charles L. Loveall
ENGINEER OF STRUCTURES

APPROVED Louis Guard
DIRECTOR OF HIGHWAYS

M-144-92

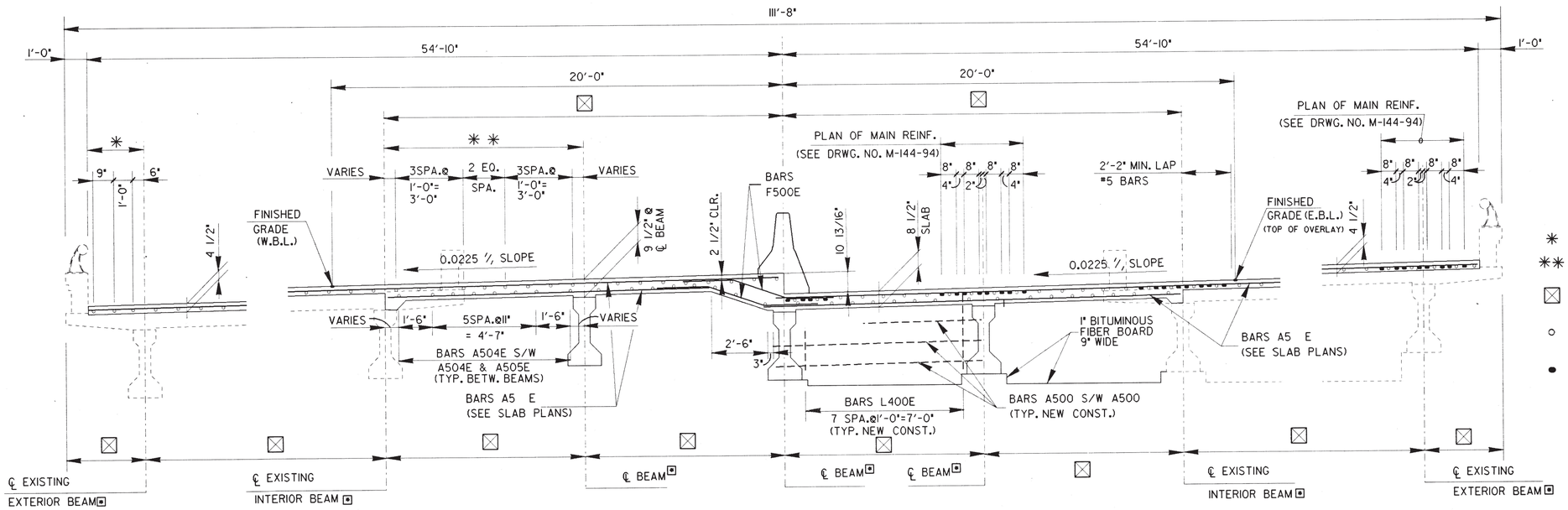
CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTE: ALL DIMENSIONS SHOWN ARE RADIAL DIMENSIONS.



℄ ASSHTO TYPE II PRESTRESSED (TYP.)

✳ DENOTES: SPACING TYP. @ EXTERIOR BEAMS.

✳✳ DENOTES: SPACING TYP. BETWEEN ALL BEAMS.

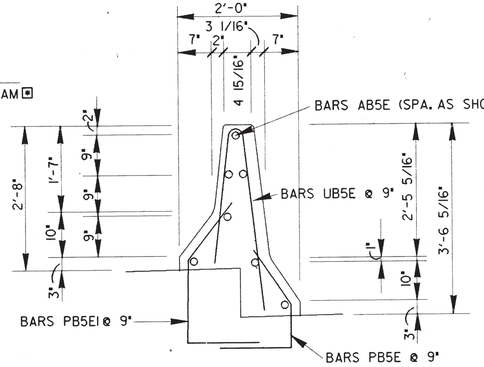
☒ DENOTES: VARIES, SEE FRAMING PLAN FOR DIMENSIONS.

○ DENOTES: THRU BARS (BARS A504E S/W A504E & A505E)

● DENOTES: MAIN REINFORCING

HALF SECTION NEAR MID-SPAN

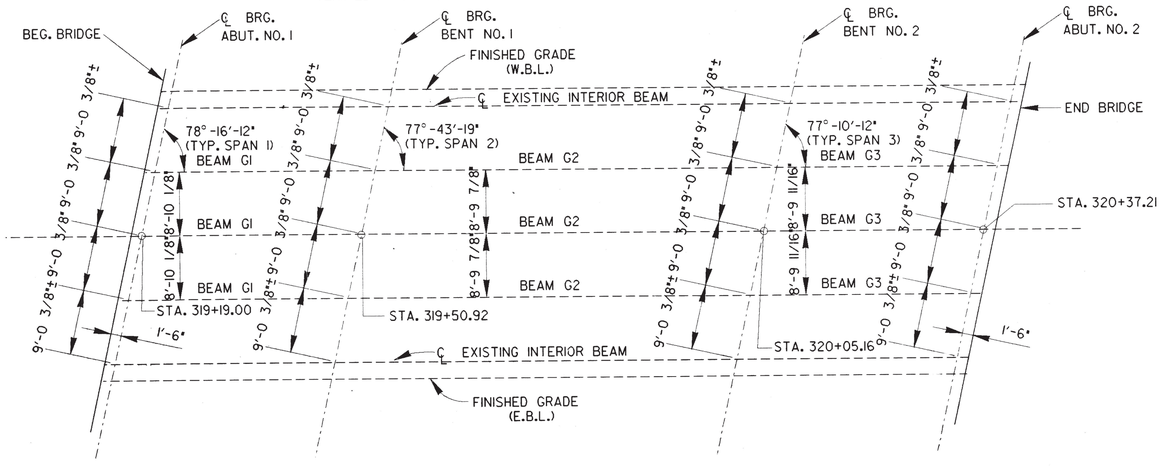
HALF SECTION NEAR SUPPORT



TYPICAL CROSS-SECTION

(LOOKING FORWARD ON SURVEY)

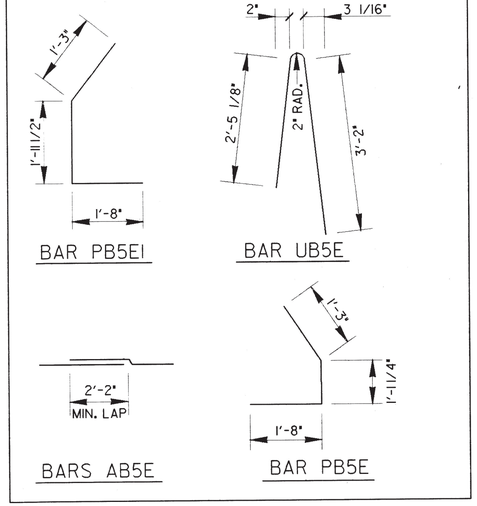
NOTE: EXISTING DIMENSIONS TO BE FIELD VERIFIED PRIOR TO BEGINNING GIRDER FABRICATION.



GIRDER FRAMING PLAN

NOTE: ALL SUBSTRUCTURES PARALLEL.

BAR DETAILS FOR CONC. MEDIAN BARRIER



REINFORCED CONCRETE MEDIAN BARRIER

ESTIMATED QUANTITIES (PER FOOT)		
APPLIED TEXTURE FINISH (NEW STRUCTURE) S.Y.	CONCRETE CLASS "A" C.Y.	EPOXY COATED REINFORCING STEEL LBS.
0.787	0.108	28.2

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGE DECK) C.Y.	CLASS "A" CONCRETE (BRIDGES) C.Y.	REINFORCING STEEL LBS.	EPOXY COATED REINFORCING STEEL LBS.
248.7	14.3	1,454	59,657

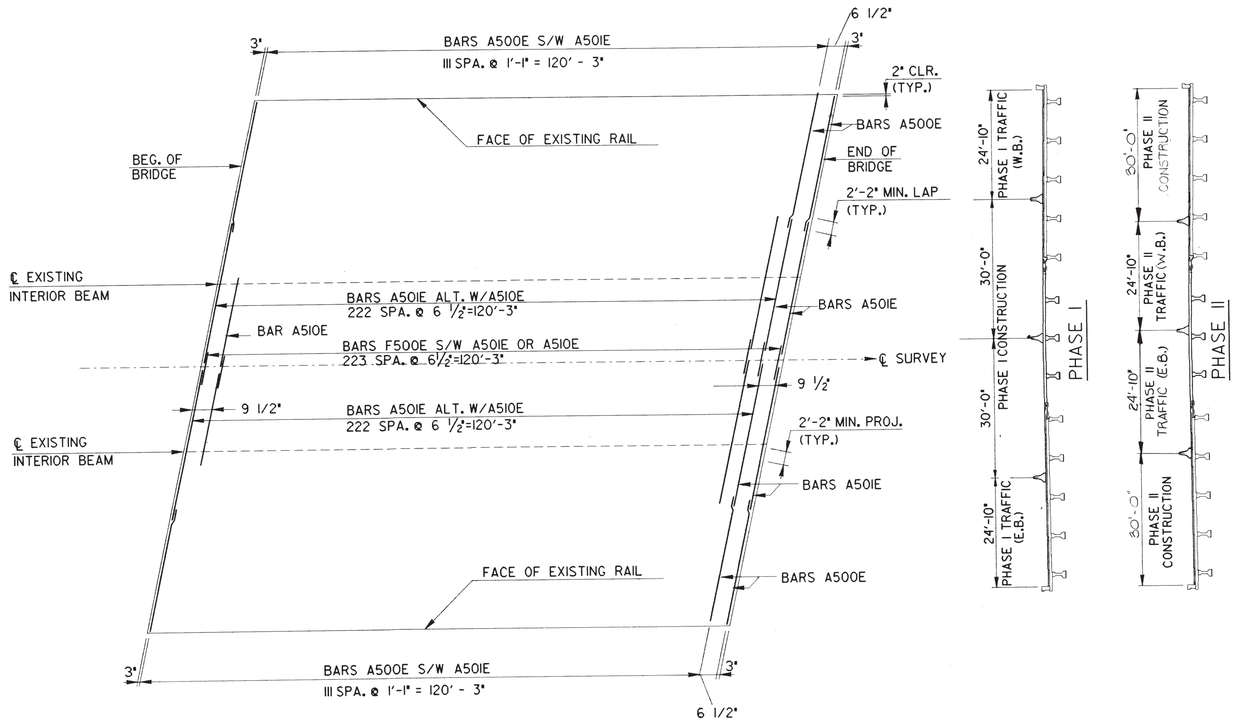
DESIGNED BY W.A.P. DATE 1/84
DRAWN BY BWS&C CAD/D DATE 1/84
SUPERVISED BY S.S.P. DATE 1/84
CHECKED BY DATE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

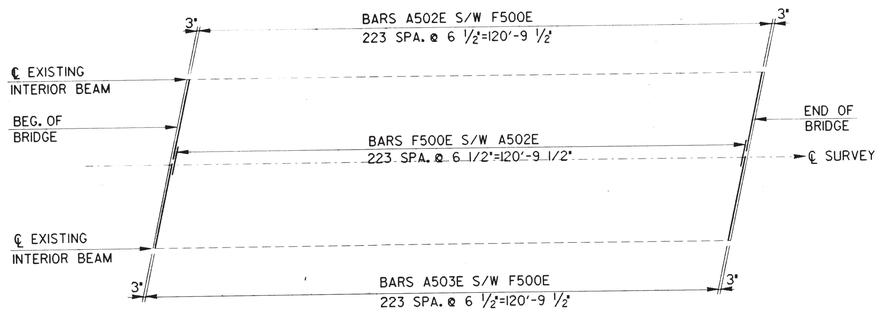
SUPERSTRUCTURE
WIDENING OF STRUCTURES 3 & 3A
I-40 OVER 40TH. AVENUE
STATION 319+78.02
DAVIDSON COUNTY
1984

CORRECT Charles L. Loveall
ENGINEER OF STRUCTURES
APPROVED Lewis Donelson
DIRECTOR OF HIGHWAYS

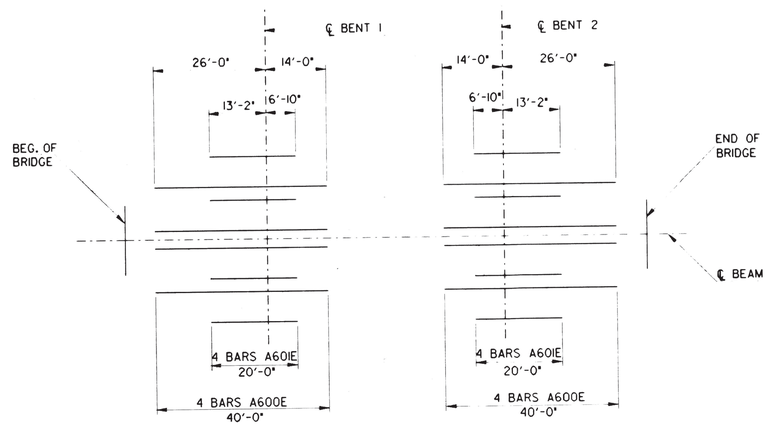
M-144-93



TOP SLAB PLAN



BOTTOM SLAB PLAN



PLAN OF MAIN REINFORCING - TYP. ALL BEAMS

DESIGNED BY W.A.P. DATE 1/84
DRAWN BY BWSAC CAD/D DATE 1/84
SUPERVISED BY S.S.P. DATE 1/84
CHECKED BY DATE

⚠1 CONSTRUCTION SEQUENCE

PHASE I

1) CONSTRUCT ALL SUBSTRUCTURES TO THE MAXIMUM EXTENT POSSIBLE W/O DISTURBING INTERSTATE TRAFFIC.
2) REROUTE TRAFFIC AWAY FROM MEDIAN AREA AND PLACE TEMPORARY MEDIAN BARRIERS AS INDICATED.
3) REMOVE EXISTING CANTILEVER SLABS, CURBS, AND BRIDGE RAIL IN MEDIAN AREA AS SHOWN ON THE PLANS. SCARIFY PORTIONS OF EXISTING SLABS WHICH ARE EXPOSED ON THE MEDIAN SIDE OF THE TEMPORARY BARRIERS FOR A DEPTH OF ONE INCH.
4) CONSTRUCT MEDIAN PORTION OF SUPERSTRUCTURE INCLUDING BEAMS, SLAB, AND REINFORCED CONCRETE MEDIAN BARRIER.

PHASE II

1) REROUTE E.B. & W.B. TRAFFIC TO MEDIAN AREA AND PLACE TEMPORARY BARRIERS AS INDICATED.
2) SCARIFY EXISTING CONCRETE DECK FOR A DEPTH OF ONE INCH IN AREAS DESIGNATED FOR PHASE II CONSTRUCTION.
3) CONSTRUCT 4 1/2" TOPPING SLAB OVER EXISTING DECK FOR AREAS DESIGNATED FOR PHASE II CONSTRUCTION.

⚠1 BARRIER LOCATION FOR PHASED CONSTRUCTION

(LOOKING BACK ON SURVEY)

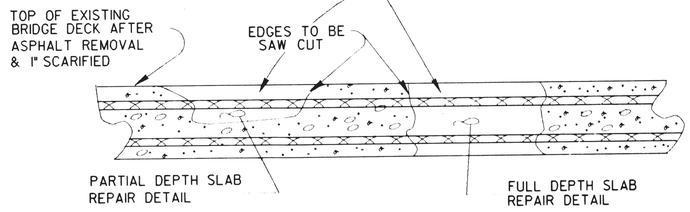
CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTE: CONCRETE FOR DECK REPAIR SHALL BE POURED WHEN POURING THE 4 1/2" NEW DECK. THE COST OF THE CONCRETE BELOW THE SCARIFICATION LEVEL TO BE INCLUDED IN THE ITEM 604-10.30 OR 604-10.50 .



SKETCH SHOWING DECK REPAIR

NOTE : REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF 3/4" BELOW THE TOP MAT OF THE REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE BLAST CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE DIVISION OF STRUCTURES. PARTIAL DEPTH DECK REPAIR WILL BE PAID FOR UNDER ITEM NO.604-10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), SQ.YD. IF DETERIORATED CONCRETE IS ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB THEN THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604-10.30, BRIDGE DECK REPAIR (FULL DEPTH OF SLAB), SQ. YD.

NOTE : ITEMS 604-10.30 AND 604-10.50 SHALL BE BID WITH THE CONTINGENCY THAT THESE ITEMS MAY BE INCREASED,DECREASED OR ELIMINATED AS DIRECTED BY THE ENGINEER.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS WIDENING OF STRUCTURES 3 & 3A I-40 OVER 40TH. AVENUE STATION 319+78.02 DAVIDSON COUNTY 1984

CORRECT Gladdon L Loveall
ENGINEER OF STRUCTURES

APPROVED Lewis Guard
DIRECTOR OF HIGHWAYS

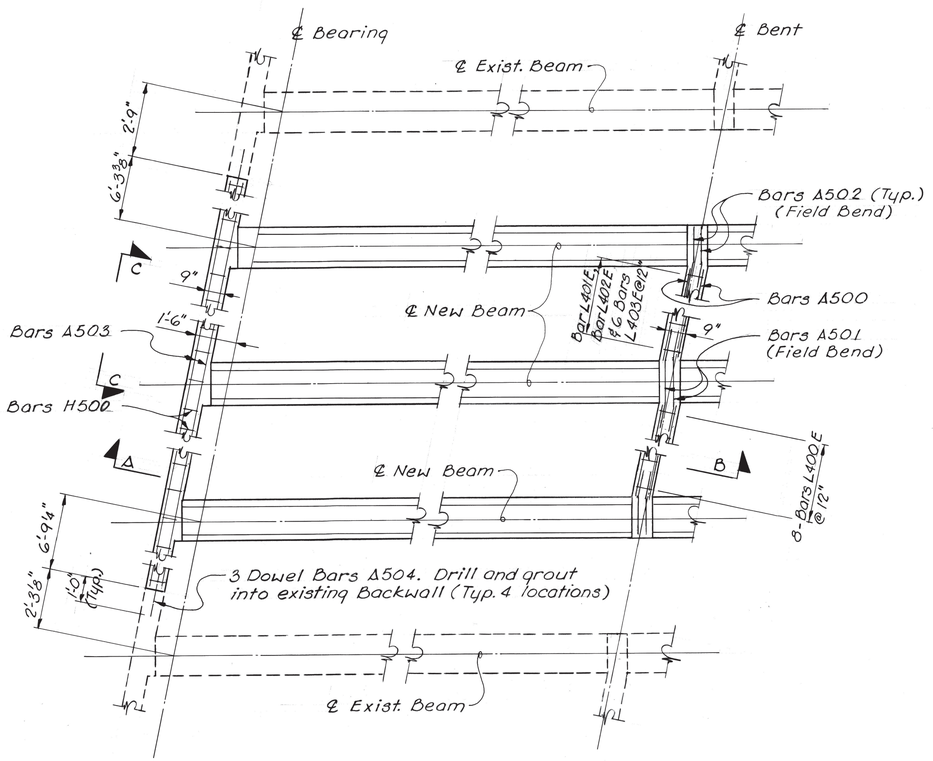
M-144-94

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

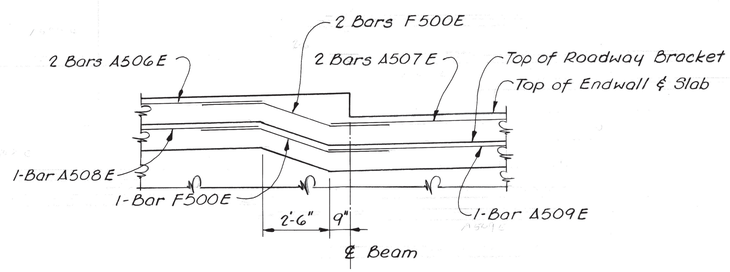
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

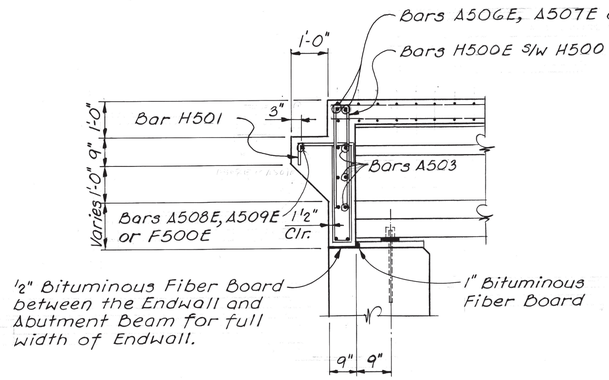


PLAN OF ENDWALL AND DIAPHRAGM

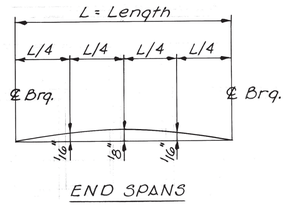
NOTES:
1. All girders to be supported during construction of slab to prevent rotation.
2. When pouring slab, provisions shall be made for setting reinforcing steel in median barrier. The median barrier shall not be poured until the slab is poured and cured.



SECTION C-C

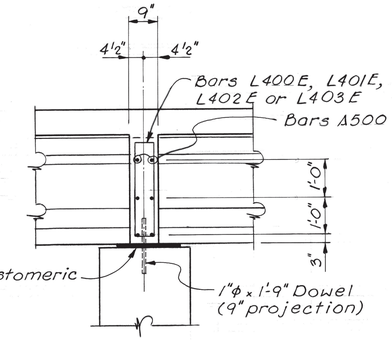


SECTION A

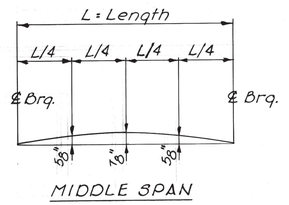


END SPANS

NOTE: Top of dowels to be covered with ½" of compressible material and the 9" projection wrapped with two layers of waterproof paper.



SECTION B



MIDDLE SPAN

DEAD LOAD CORRECTION CURVE

NOTE: This curve is for dead load slab and all dead loads that are applied after slab is in place, and should be corrected to compensate for the effects due to vertical curve.

DESIGNED BY W.A.P. DATE 1/84
DRAWN BY E.H. DATE 1/84
SUPERVISED BY S.S.P. DATE 1/84
CHECKED BY DATE

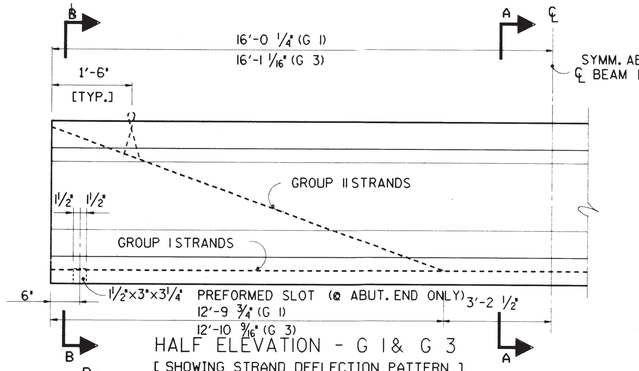
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS

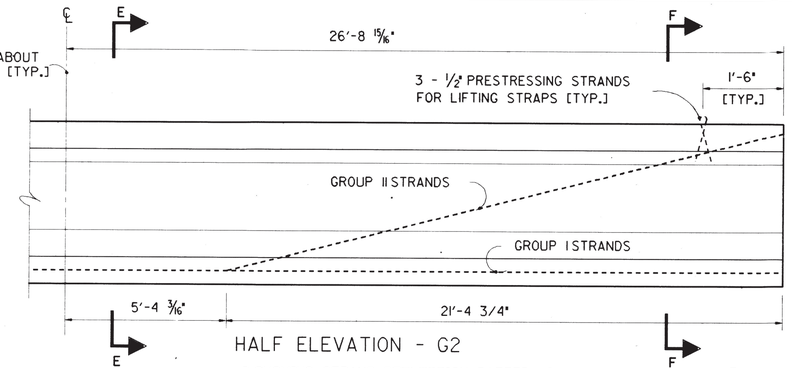
Widening of Structures 3 & 3A
I-40 Over 40th Avenue
Station 319+78.02
Davidson County
1984

CORRECT Clellon L Loveall
ENGINEER OF STRUCTURES
APPROVED Lewis Evans
DIRECTOR OF HIGHWAYS

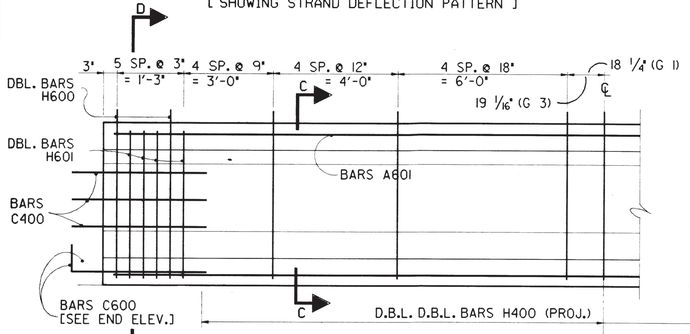
M-144-95



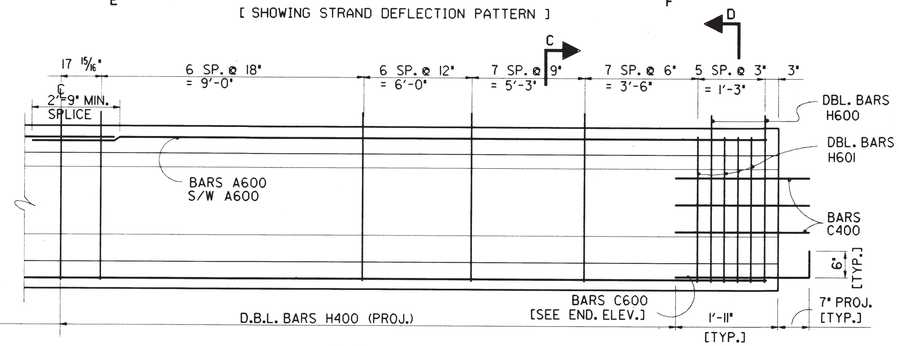
HALF ELEVATION - G 1 & G 3
[SHOWING STRAND DEFLECTION PATTERN]



HALF ELEVATION - G2
[SHOWING STRAND DEFLECTION PATTERN]



HALF ELEVATION - G 1 & G 3
[SHOWING REINFORCING STEEL]



HALF ELEVATION - G2
[SHOWING REINFORCING STEEL]

GENERAL NOTES

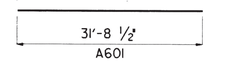
1. THE TOP OF ALL BEAMS ARE TO BE ROUGH FLOATED. AT APPROXIMATELY THE TIME OF INITIAL SET, THE TOP OF THE BEAMS WILL ALSO BE SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND PRODUCE A ROUGH SURFACE. WHERE PRECAST SLAB PANELS ARE TO BE USED AND SET ON FELT PADS, THE OUTER TWO INCHES OF THE TOP FLANGE MAY BE TROWELED.
2. MILD STEEL REINFORCING SHALL BE ASTM A615 GRADE 60.
3. ALL PRESTRESSING STRANDS TO BE 1/2" Ø ASTM GRADE 270k 7 WIRE UNCOATED STRESS-RELIEVED PRESRESSING STRANDS.
4. AN INITIAL FORCE OF 28,936 LBS. SHALL BE APPLIED TO EACH STRAND IN ALL BEAMS.
5. ALL BEAMS ARE AASHTO-PCI STANDARD TYPE II .
6. AFTER THE BEAM IS REMOVED FROM THE PRESTRESSING BED, BARS C600 AND C400 SHALL BE BENT A SUFFICIENT AMOUNT SO AS TO PERMIT THE "C" BARS OF ADJOINING BEAMS TO MESH WHEN IN THE ERECTED POSITION.
7. THE PRESTRESSING STRANDS SHALL BE LEFT PROJECTING 3"+/- FROM THE ENDS OF THE BEAMS. THERE SHALL NOT BE ANY PROTECTIVE COATING PLACED ON THE ENDS OF THE BEAMS OR ON THE PROJECTING STRANDS.
8. ELASTOMERIC PADS TO BE 1" ×6" ×1'-6" WITH 1 1/4" ×3" SLOT AT ABUTMENT ENDS AND 1" ×18" ×1'-9" WITH 1 1/4" Ø HOLES AT BENTS.
9. THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 5,000 PSI. AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 4,000 PSI. SEE GENERAL NOTES AND ESTIMATED QUANTITIES SHEET FOR CONCRETE FINISHING NOTES.

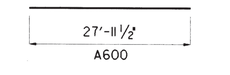
CONST. NO. 19003-3149-44

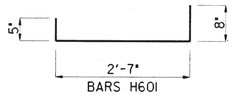
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

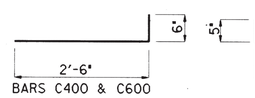
REVISIONS

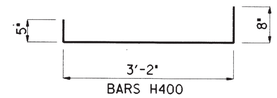
NO.	DATE	BY	BRIEF DESCRIPTION

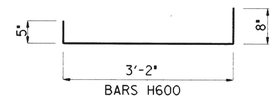








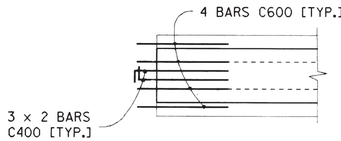




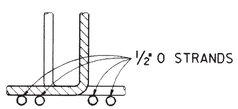
BILL OF STEEL - PER BEAM					
BARS	SIZE	G 1 & G 3		G 2	
		NO. REQ'D.	LGTH.	NO. REQ'D.	LGTH.
C400	4	12	3'-0"	12	3'-0"
H400	4	50	4'-3"	106	4'-3"
A600	6	——	——	4	27'-11 1/2"
A601	6	2	3'-8 1/2"	——	——
C600	6	8	3'-0"	8	3'-0"
H600	6	8	4'-3"	8	4'-3"
H601	6	16	3'-8"	16	3'-8"

ESTIMATED QUANTITIES - PER BEAM				
BEAM	NO. REQ'D.	CLASS "A" CONCRETE C.Y.	REINFORCING STEEL LBS.	PRESTRESSING STRANDS LBS.
G 1	3	3.0	436	173
G 2	3	5.1	668	457
G 3	3	3.1	436	174

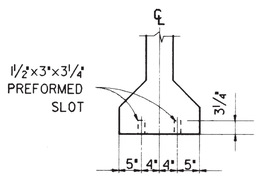
NOTE: COST OF ELASTOMERIC BEARING PADS, 24 DOWEL BARS , AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE COST OF PRESTRESSED BEAMS.



PARTIAL PLAN
N.T.S.



DETAIL "A"
N.T.S.



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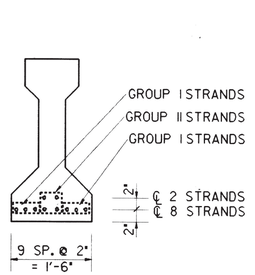
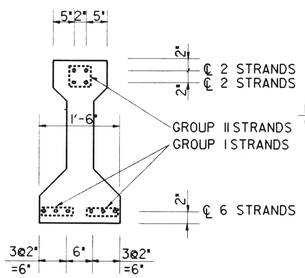
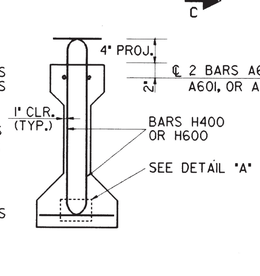


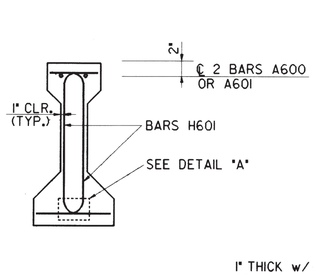
SECTION A-A
[SHOWING STRAND PATTERN]



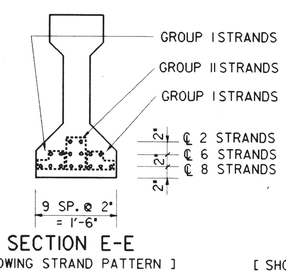
SECTION B-B
[SHOWING STRAND PATTERN]



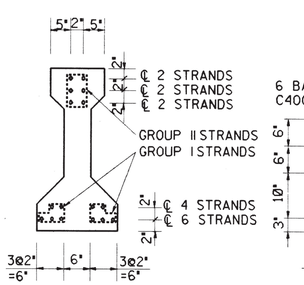
SECTION C-C
[SHOWING PROJECTING BARS]



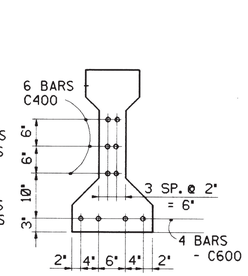
SECTION D-D
[SHOWING NON-PROJECTING BARS]



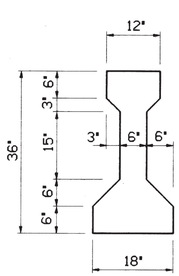
SECTION E-E
[SHOWING STRAND PATTERN]



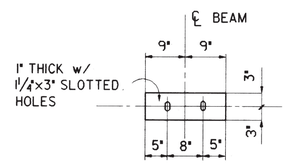
SECTION F-F
[SHOWING STRAND PATTERN]



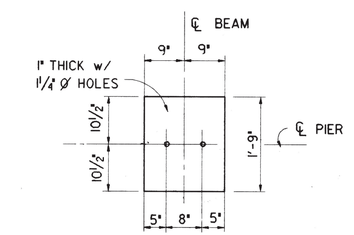
END ELEVATION



AASHTO TYPE II BEAM



FOR ABUTMENTS



FOR BENTS

BEARING PAD DETAILS
N.T.S.

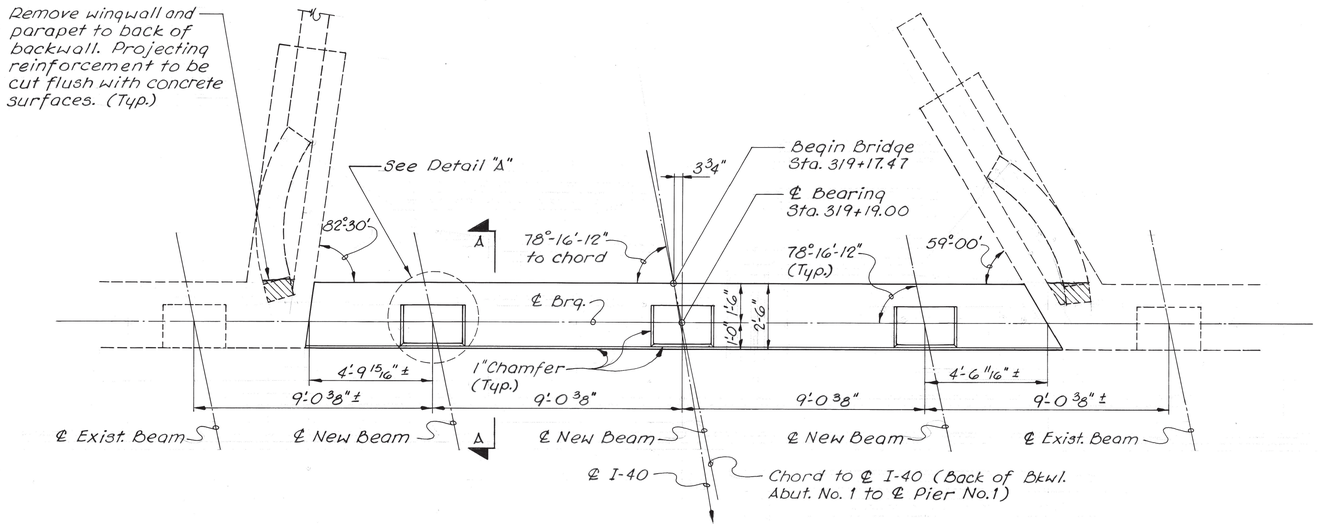
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PRESTRESSED BEAMS
WIDENING OF STRUCTURES 3 & 3A
I-40 OVER 40th AVENUE
STATION 319+78.02
DAVIDSON COUNTY
1984

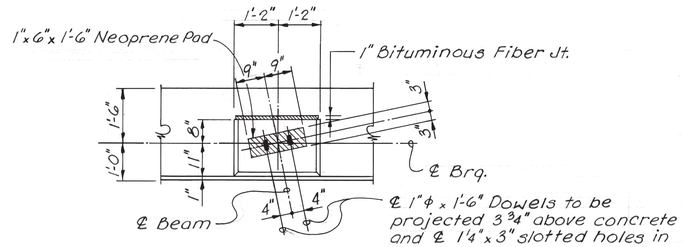
CORRECT Gladden L Loveall
ENGINEER OF STRUCTURES
APPROVED Louis Guard
DIRECTOR OF HIGHWAYS

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

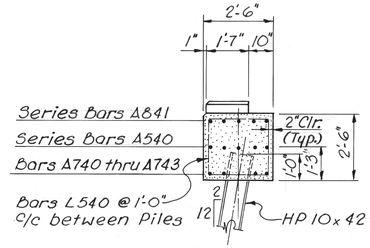
M-144-96



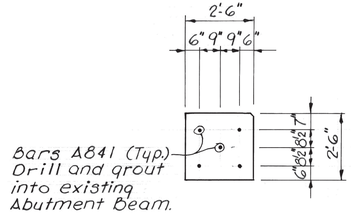
PLAN



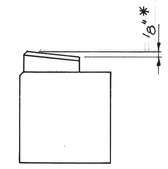
DETAIL "A"



SECTION A-A

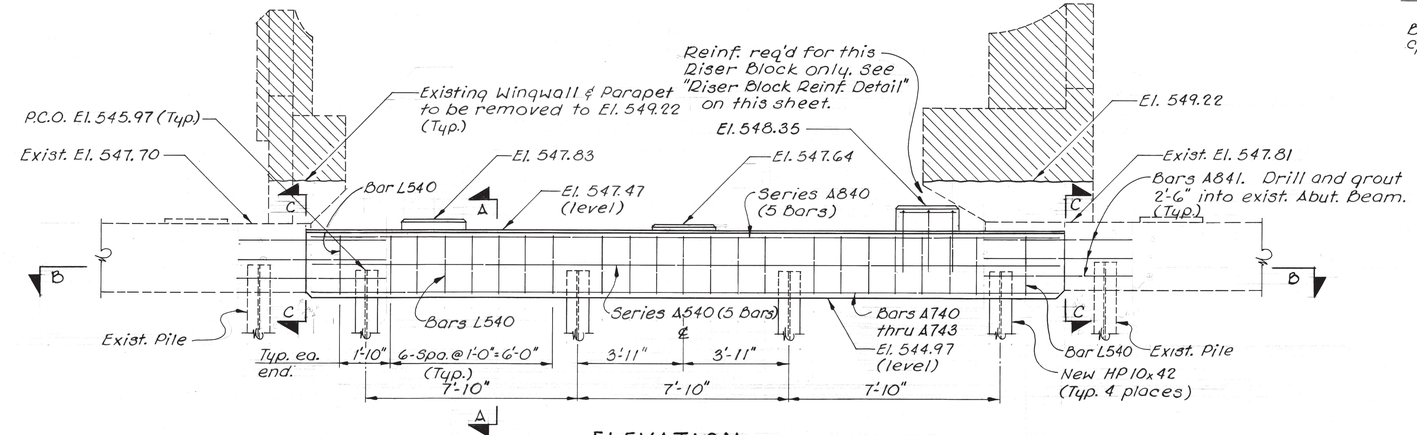


SECTION C-C
(Showing Dowel Bars)

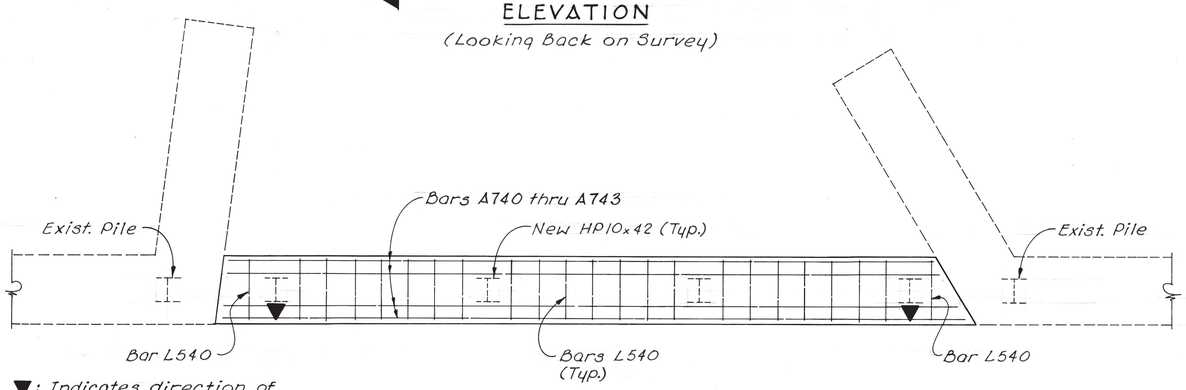


RISER BLOCK SLOPE DETAIL

* Slope shown is along ℄ of Beam.



ELEVATION
(Looking Back on Survey)

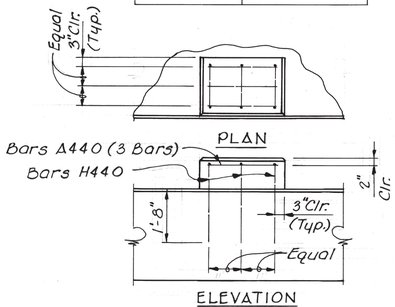


▼: Indicates direction of 2:12 batter.

SECTION B-B

ESTIMATED QUANTITIES

CONCRETE CLASS "A" C.Y.	REINFORCING STEEL LBS.
6.5	1112



ELEVATION

RISER BLOCK REINF. DETAIL

GENERAL NOTES:

1. When pouring abutment beam, provisions shall be made for setting dowel bars. If the contractor elects to drill the holes for the dowel bars, the reinforcing steel shall be placed so as not to interfere with the drilling. Bar projection: 3¾".
2. Riser blocks to be poured monolithically with abutment beam.
3. Bridge seat elevations are given at the intersection of ℄ bearing and ℄ of beam.
4. Riser block bearing pad surfaces to conform to bottom of beam grade.
5. Backwalls shall not be poured until the superstructure girders are in place.

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT No. 1
Widening of Structures 3 & 3A
I-40 Over 40th Avenue
Station 319+78.02
Davidson County
1984

CORRECT Sheldon L. Lowell
ENGINEER OF STRUCTURES
APPROVED Louis B. Evans
DIRECTOR OF HIGHWAYS

M-144-97

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	E.H.	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

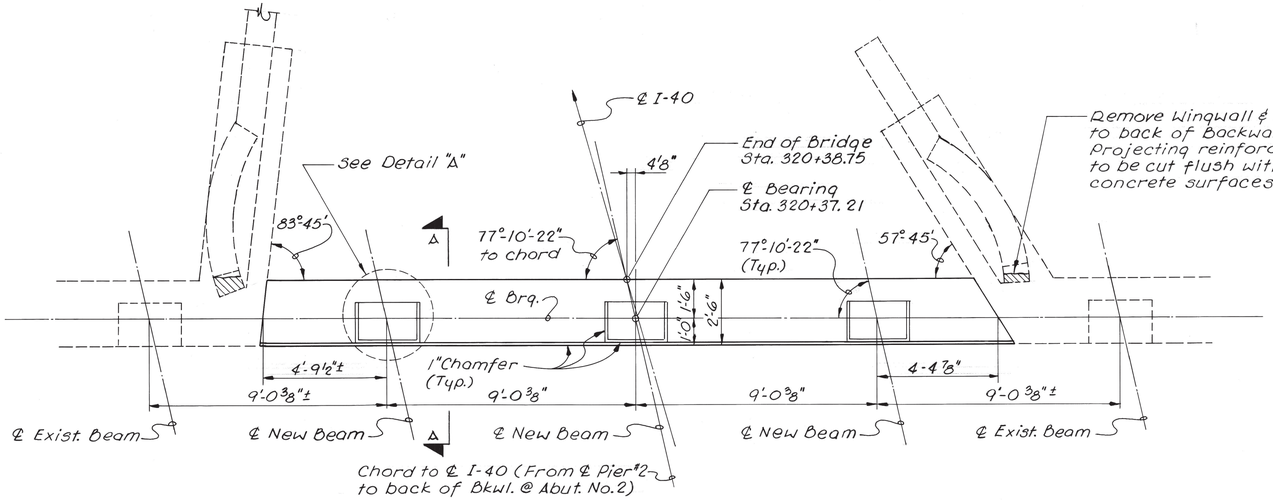
SCANNED

CONST. NO. 19003-3149-44

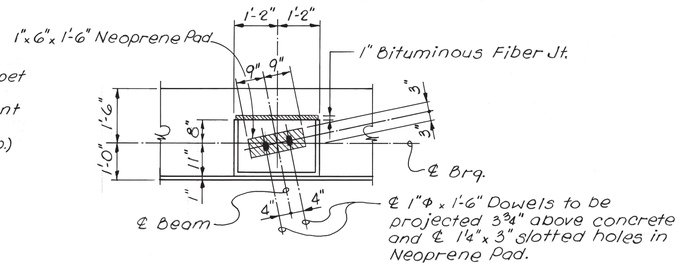
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

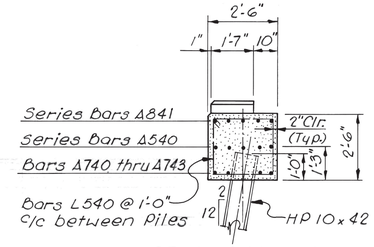
NO.	DATE	BY	BRIEF DESCRIPTION



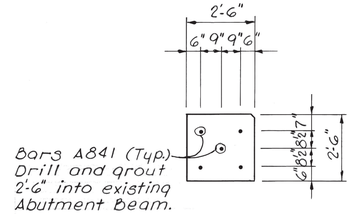
PLAN



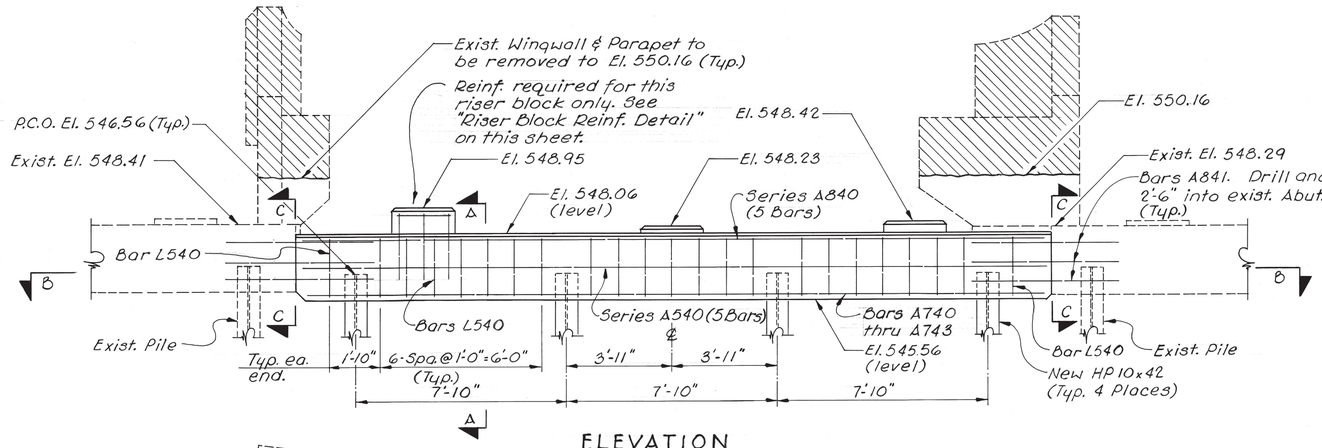
DETAIL "A"



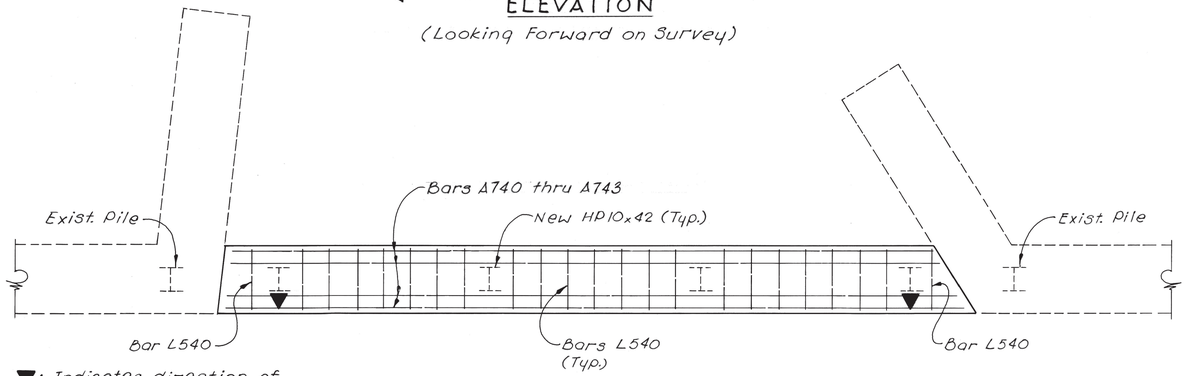
SECTION A-A



SECTION C-C
(Showing Dowel Bars)

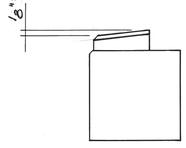


ELEVATION
(Looking Forward on Survey)



▼: Indicates direction of 2:12 batter.

SECTION B-B



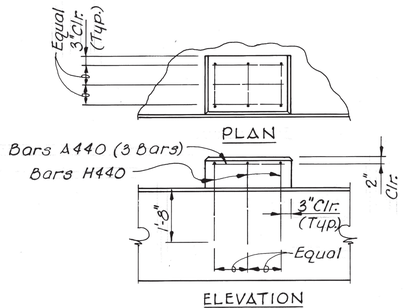
Direction of Survey

RISER BLOCK SLOPE DETAIL

* Slope shown is along ℄ of Beam.

ESTIMATED QUANTITIES

CONCRETE CLASS "A" C.Y.	REINFORCING STEEL LBS.
6.5	1112



ELEVATION

RISER BLOCK REINF. DETAIL

NOTE: See Abut. No.1 for General Notes.

DESIGNED BY W.A.P. DATE 1/84
DRAWN BY E.H. DATE 1/84
SUPERVISED BY S.S.P. DATE 1/84
CHECKED BY DATE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT No.2

Widening of Structures 3 & 3A
I-40 Over 40th Avenue
Station 319+78.02
Davidson County
1984

CORRECT Clellon L. Loveall
ENGINEER OF STRUCTURES

APPROVED Lewis Evans
DIRECTOR OF HIGHWAYS

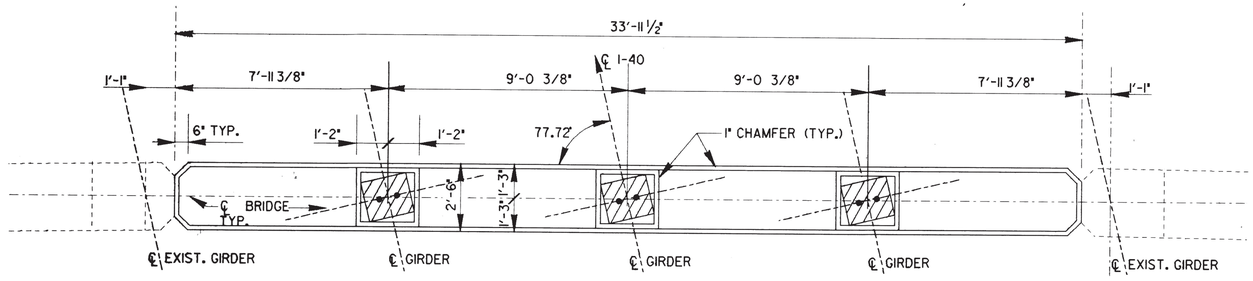
M-144-98

CONST. NO. 19003-3149-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

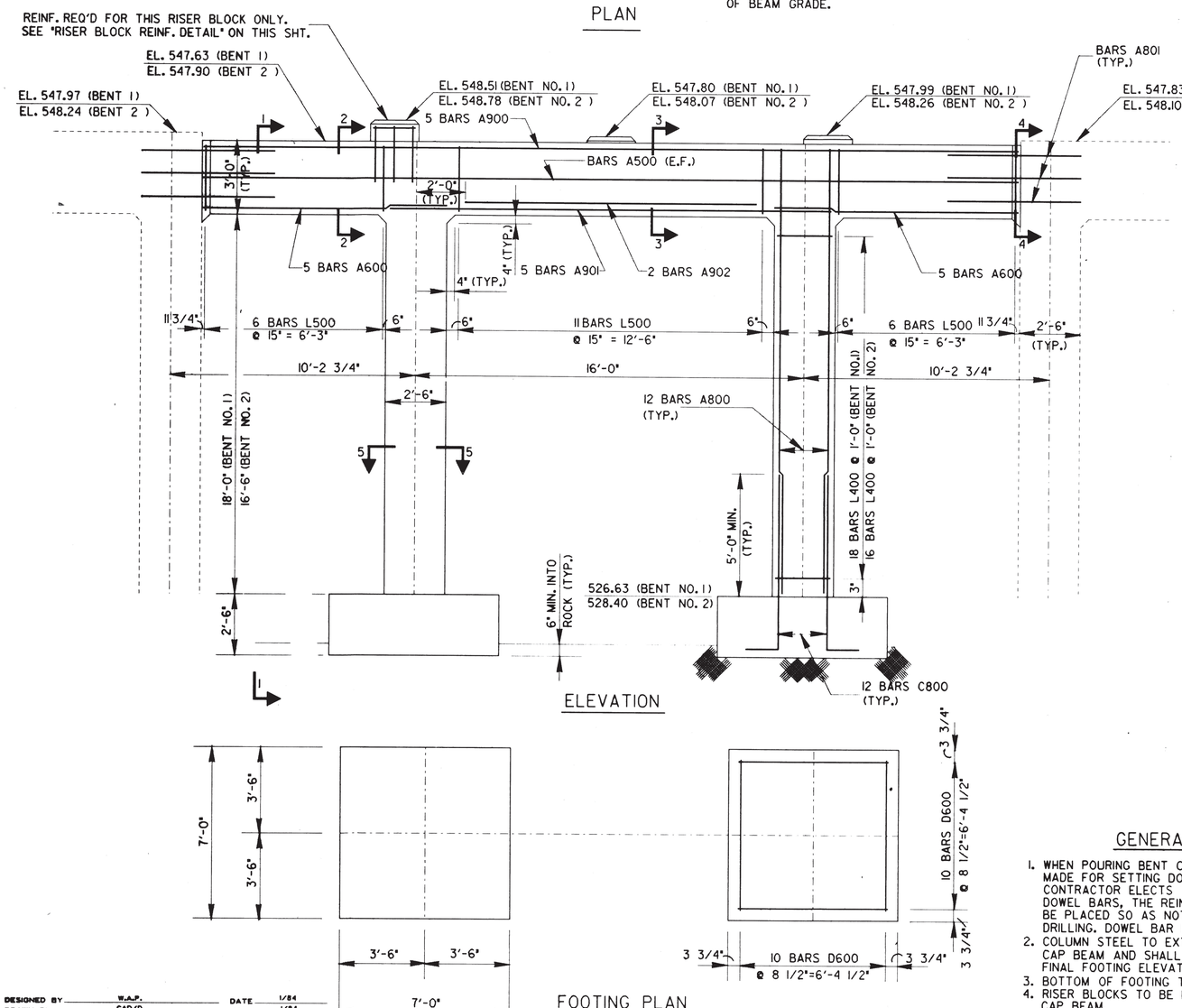
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



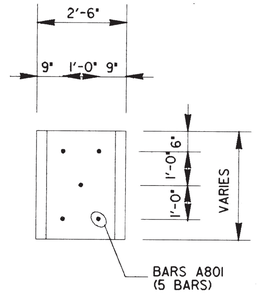
PLAN

NOTE: RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.



ELEVATION

FOOTING PLAN



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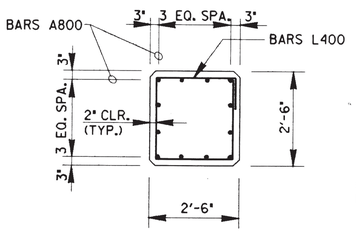

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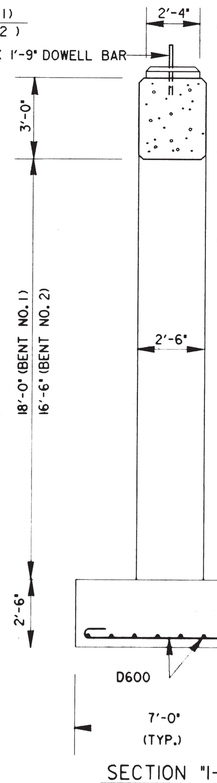
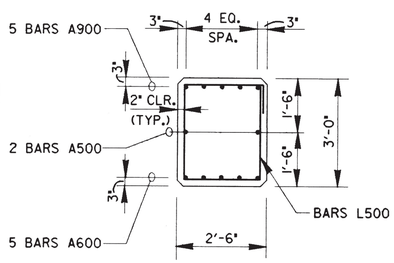


SECTION "1-1"



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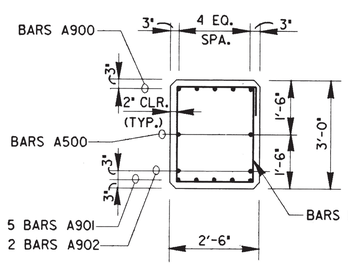

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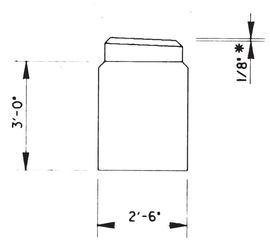
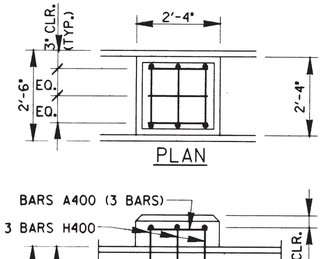
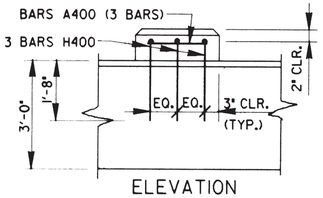


RISER BLOCK SLOPE DETAIL

* SLOPE SHOWN IS ALONG ℄ OF BEAM



PLAN



ELEVATION

RISER BLOCK REINF. DETAIL

GENERAL NOTES

1. WHEN POURING BENT CAP, PROVISIONS SHALL BE MADE FOR SETTING DOWEL BARS. IF THE CONTRACTOR ELECTS TO DRILL HOLES FOR DOWEL BARS, THE REINFORCING STEEL SHALL BE PLACED SO AS NOT TO INTERFERE WITH DRILLING. DOWEL BAR PROJECTION: 9"
2. COLUMN STEEL TO EXTEND A MINIMUM OF 2'-6" INTO CAP BEAM AND SHALL NOT BE ORDERED UNTIL THE FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.
3. BOTTOM OF FOOTING TO BE A MINIMUM OF 6" INTO ROCK.
4. RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

ESTIMATED QUANTITIES

	CONCRETE CLASS "A" C.Y.	REINFORCING STEEL LBS.
BENT #1	27.1	4,154
BENT #2	26.4	4,129

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BENT NO. 1 & 2
WIDENING OF STRUCTURES 3 & 3A
I-40 OVER 40th. AVENUE
STATION 319+78.02
DAVIDSON COUNTY
1984

CORRECT Sheldon L Loveall
ENGINEER OF STRUCTURES

APPROVED Louis Guam
DIRECTOR OF HIGHWAYS

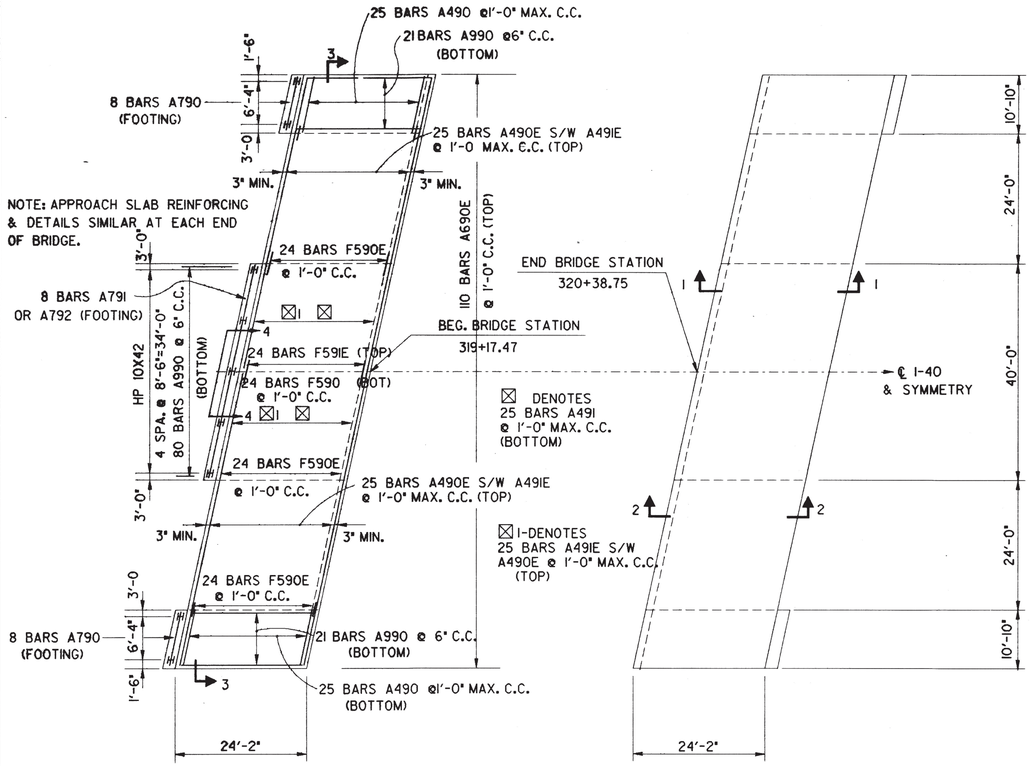
M-144-99

CONST. NO. 19003-3149-44

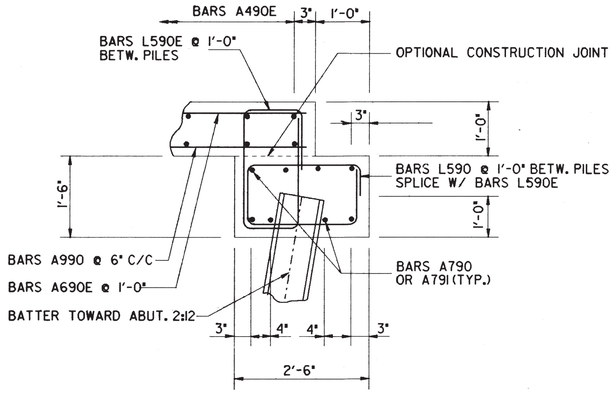
PROJECT NO.	YEAR	SHEET NO.
IR-40-3(89)204	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



APPROACH SLAB PLAN



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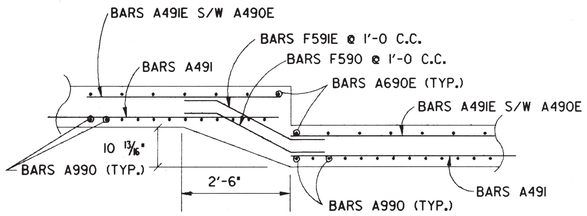

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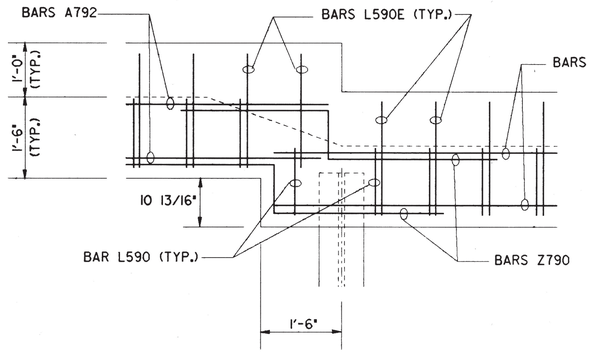

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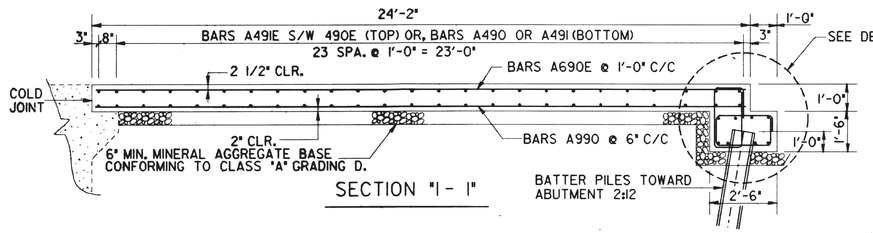

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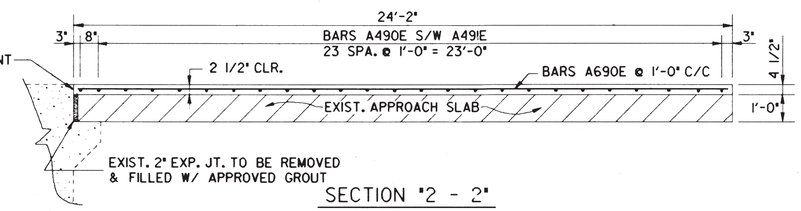

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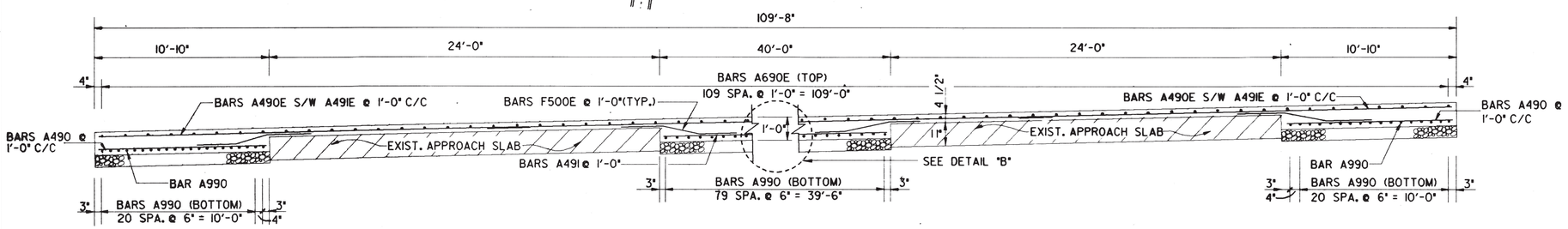


SECTION "3 - 3"

GENERAL NOTES

1. COST OF MINERAL AGGREGATE BASE QUANTITY TO BE PAID AS ITEM 303-01 MINERAL AGGREGATE CLASS "A", GRADING D.
2. IN LIEU OF CLASS "A", GRADING D MATERAL SHOWN, CLASS "B", GRADING C OR D MAY BE USED.
3. PILES SHALL BE HP 10x42, AND SHALL HAVE A LENGTH OF 10'-0" REGARDLESS OF BEARING.

ESTIMATED QUANTITIES (EACH)			
ITEM	CLASS "A" CONCRETE (BRIDGE DECK) C.Y.	REINFORCING STEEL LB.	EPOXY COATED REINF. STEEL LB.
APPROACH SLAB	80.1	12,703	7,176

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

APPROACH SLABS
WIDENING OF STRUCTURES 3 & 3A
I-40 OVER 40th AVENUE
STATION 319+78.02
DAVIDSON COUNTY
1984

DESIGNED BY	W.A.P.	DATE	1/84
DRAWN BY	CAD/D	DATE	1/84
SUPERVISED BY	S.S.P.	DATE	1/84
CHECKED BY		DATE	

CORRECT Charlton L Loveall
ENGINEER OF STRUCTURES
APPROVED Louis Evans
DIRECTOR OF HIGHWAYS

M-144-100

BILL OF STEEL

PROJECT NO. IR-40-3(89)204
CONST. NO. 19003-3149-44

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

SUPERSTRUCTURE

BAR	LOCATION	SIZE	NO REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A500E	SLAB	5	226					29'0"
A501E	SLAB	5	226					29'1"
A502E	SLAB	5	224					16'0"
A503E	SLAB	5	224					18'7"
A504E	SLAB	5	584					30'0"
A505E	SLAB	5	146					9'-8"
A506E	ENDWALL	5	4					14'-7"
A507E	ENDWALL	5	4					18'-7"
A508E	RDWAY.BRKT.	5	2					11'-10"
A509E	RDWAY.BRKT.	5	2					16'-7"
A510E	SLAB	5	222					20'2"
A600E	SLAB	6	104					40'0"
A601E	SLAB	6	104					20'0"
F500E	SLAB	5	454	2'3"	2'6 3/4"	2'3"	0'3/4"	7'1"
H500E	ENDWALL	5	64	6"	2'7"			5'8"
L400E	ENDWALL	4	16	6"	1'-0"	2'7"		7'2"
L401E	ENDWALL	4	2	6"	1'-0"	2'9"		7'6"
L402E	ENDWALL	4	2	6"	1'-0"	3'1"		8'2"
L403E	ENDWALL	4	12	6"	1'-0"	3'5"		8'10"
A500	DIAPHRAGM	5	24					8'6"
A501	DIAPHRAGM	5	12					4'10"
A502	DIAPHRAGM	5	24					3'-0"
A503	ENDWALL	5	16					31'9"
A504	ENDWALL	5	12					2'0"
H500	ENDWALL	5	64	6"	2'7"			5'8"
H501	RDWAY.BRKT.	5	64	1'-8"	6"			2'-7"

PVM'T AT BR. ENDS (EACH)

BAR	LOCATION	SIZE	NO REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
	ABUTMENTS NO.1& NO.2							
A490E	SLAB (TOP)	4	50					29'-0"
A491E	SLAB (TOP)	4	50					29'-1"
A690E	SLAB (TOP)	6	110					23'-10"
F590E	SLAB	5	96	2'-0"	2'-6 1/2	2'-0"	1' 6"	6'-8"
F591E	STEP	5	24	2'-3"	2'-6 3/4	2'-3"	1'10 3/4"	7'-1"
L590E	FTG.	5	58	1'-2 1/8"	1'-0"	2'-2 1/8"		7'-6"
A490	SLAB	4	50					10'-9"
A491	SLAB	4	50					20'-2"
A790	FTG.	7	16					10'-9"
A791	FTG.	7	8					21'-2"
A792	FTG.	7	8					19'-8"
A990	SLAB	9	122					23'-10"
F590	STEP	5	24	2'-3"	2'-6 3/4"	2'-3"	1'10 3/4"	7'-1"
L590	FTG.	5	58	1'-2 1/8"	1'-0"	2'-2 1/8"		7'-6"
Z790	FTG.	7	8	10 3/4"	3'-9"	3'-9"		8'-3"

ABUTMENTS NO.1 & NO.2 (EACH)

BAR	LOCATION	SIZE	NO REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A440	RISER BLOCK	4	3					2'0"
SERIES	ABUT.BM	5	1	LENGTH VARIES FROM 26'0" TO 27'8" IN INCREMENTS OF 5"				134'2"
A540								
A740	ABUT.BM	7	1					26'0"
A741	ABUT.BM	7	1					26'5"
A742	ABUT.BM	7	1					27'3"
A743	ABUT.BM	7	1					27'8"
SERIES	ABUT.BM	8	1	LENGTH VARIES FROM 26'0" TO 27'8" IN INCREMENTS OF 5"				134'2"
A840								
A841	ABUT.BM	8	10					5'6"
H440	RISER BLOCK	4	3	1'-3"	2'-4"			5'-10"
L540	ABUT.BM	5	23	2'-2"	1'-0"	2'-2"		9'-8"

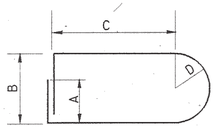
BENT NO. 1

BAR	LOCATION	SIZE	NO REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A400	RISER BLK.	4	3					2'-0"
A500	CAP	5	2					33'-8"
A600	CAP	6	10					10'-2"
A800	COL.	8	24					20'-9"
A801	CAP	8	10					5'-6"
A900	CAP	9	5					33'-8"
A901	CAP	9	5					18'-6"
A902	CAP	9	2					12'-0"
C800	FTG.	8	24	7'-3"				8'-7"
D600	FTG.	6	40	6'-6"				7'-2"
H400	RISER BLK.	4	3	1'-10"	2'-3 1/2"			6'-5"
L400	COL.	4	36	2'-2"	1'-0"	2'-2"		9'-8"
L500	CAP	5	23	2'-2"	1'-0"	2'-8"		10'-8"

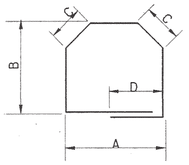
BENT NO. 2

BAR	LOCATION	SIZE	NO REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A400	RISER BLK.	4	3					2'-0"
A500	CAP	5	2					33'-8"
A600	CAP	6	10					10'-2"
A800	COL.	8	24					19'-3"
A801	CAP	8	10					5'-6"
A900	CAP	9	5					33'-8"
A901	CAP	9	5					18'-6"
A902	CAP	9	2					12'-0"
C800	FTG.	8	24	7'-3"				8'-7"
D600	FTG.	6	40	6'-6"				7'-2"
H400	RISER BLK.	4	3	1'-10"	2'-3 1/2"			6'-5"
L400	COL.	4	32	2'-2"	1'-0"	2'-2"		9'-8"
L500	CAP	5	23	2'-2"	1'-0"	2'-8"		10'-8"

NOTE: THE SUFFIX "E" DENOTES EPOXY COATED REINFORCEMENT.



BARS X

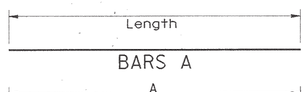


BARS M

REINFORCING STEEL CODE

Type	Size	Series

NOTE: Dimensions shown on this sheet are outside to outside of Bar. Standard C.R.S.I. hook details shall apply



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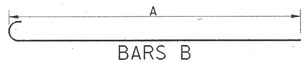

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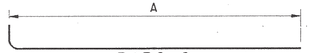

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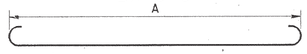

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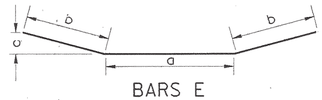

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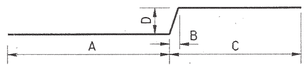

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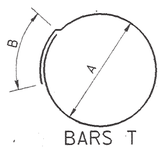

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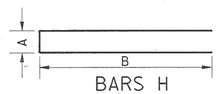

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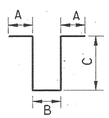

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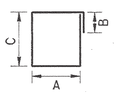

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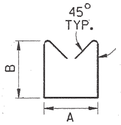

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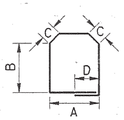

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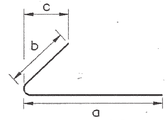

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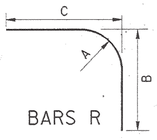

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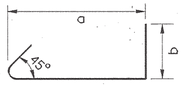
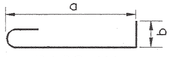
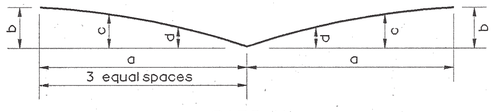


BARS YB



BARS YA



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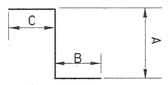

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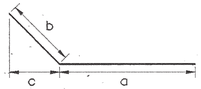
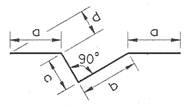
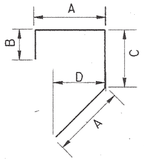


BARS CD



BARS JX



BARS J

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BILL OF STEEL

WIDENING OF STRUCTURES 3 & 3A
I-40 OVER 40TH. AVENUE
STATION 319-78.02
DAVIDSON COUNTY
1984

DESIGNED BY	W.A.P.	DATE 1/84
DRAWN BY	CAD/D	DATE 1/84
SUPERVISED BY	S.S.P.	DATE 1/84
CHECKED BY		DATE

CORRECT Gladen L Loveall
ENGINEER OF STRUCTURES
APPROVED Louis Brown
DIRECTOR OF HIGHWAYS

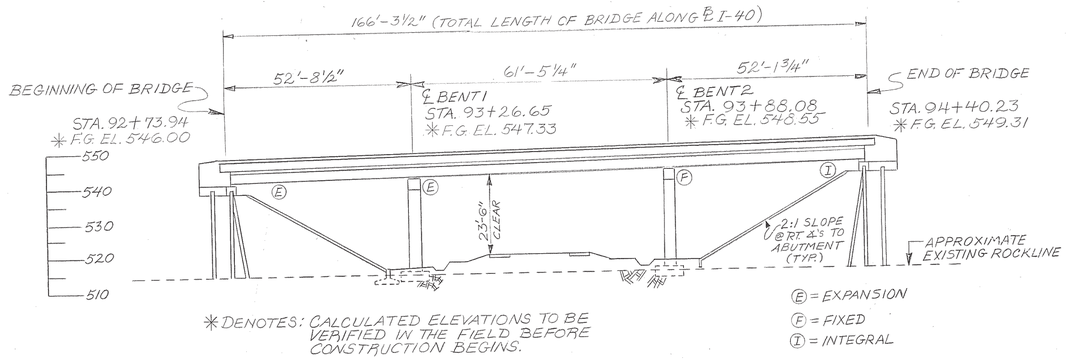
M-144-101

CONST. NO. 19005-3130-44

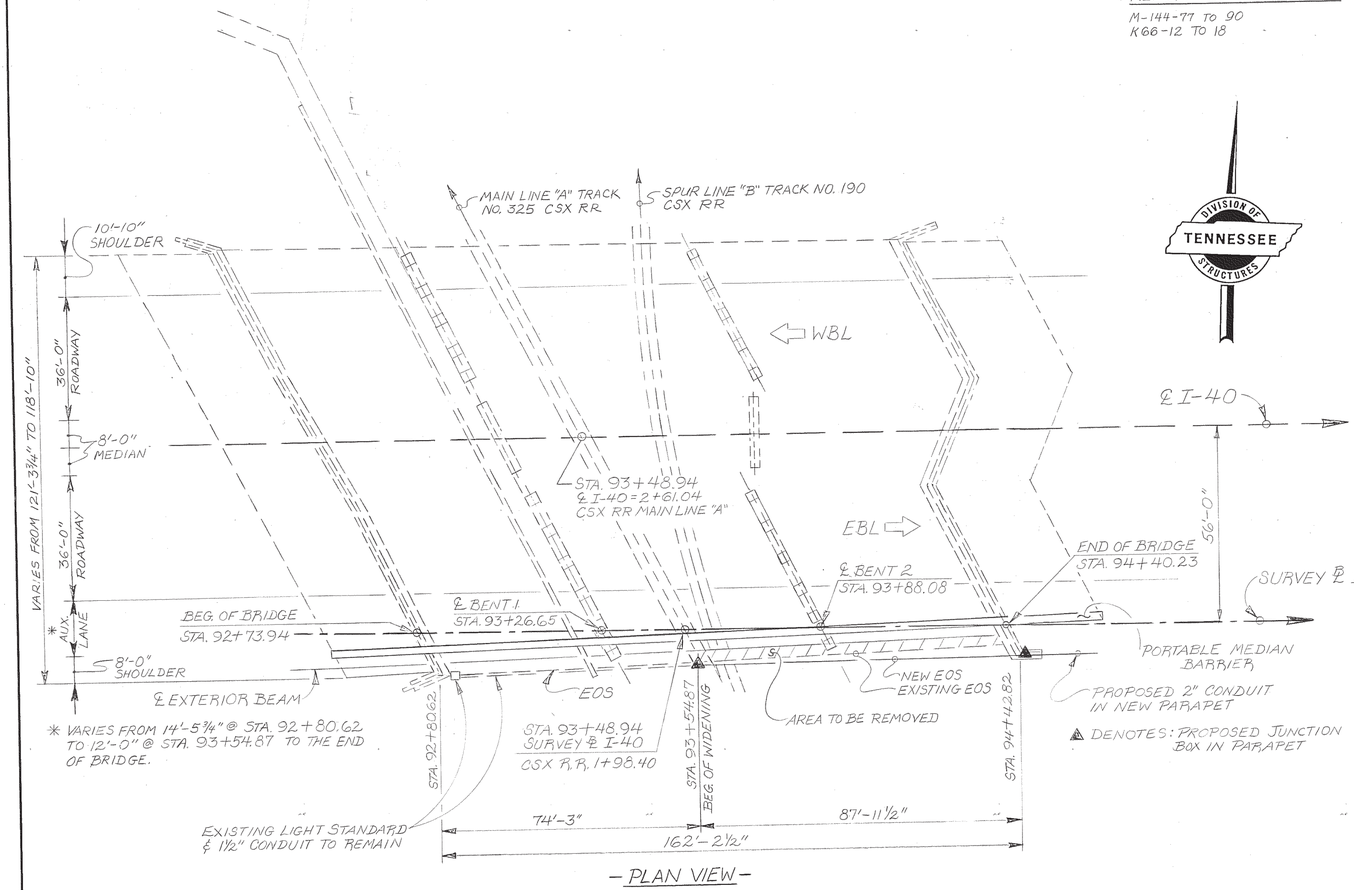
PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



— ELEVATION VIEW —

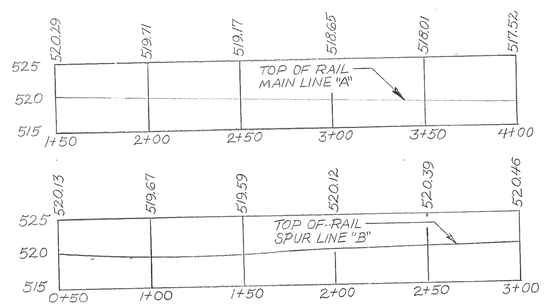


— PLAN VIEW —

REFERENCE DRAWINGS

M-144-77 TO 90
K66-12 TO 18

DIVISION OF STRUCTURES
TENNESSEE



— PROFILE OF RAILROAD —

LIST OF DRAWINGS

	DWG. NO.	LAST REV. DATE
LAYOUT	M-314-66	
GENERAL NOTES & ESTIMATED QUANTITIES	M-314-67	
SUPERSTRUCTURE	M-314-68	12/12/95
ABUTMENT NO. 2	M-314-69	
BILL OF STEEL	M-314-70	

LIST OF STANDARD DRAWINGS

	DWG NO.	LAST REV. DATE
REINFORCED CONCRETE SLOPE PAVING	RD-SA-1	4/29/88
✳ STANDARD REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS	STD.-9-1	12/9/94
MISCELLANEOUS ABUTMENT AND DRAINAGE DETAILS	STD.-10-1	5/11/92
✳ BRIDGE RAILING CONCRETE PARAPET WITH STRUCTURAL TUBING	STD.-11-1	3/28/94
STANDARD PILE DETAILS	STD.-5-1	10/25/93
STANDARD PILE DETAILS	STD.-5-2	10/26/92

LIST OF STANDARD DRAWINGS — APPROVAL OF SHOP DRAWINGS

SPEC. PROV. NO. 105A

LAST REV. DATE 3/06/95

✳ DENOTES: THESE DRAWINGS TO BE PRINTED WITH PLANS

HAROLD M. BROOKS JR. REGISTERED LANDSCAPE ARCHITECT STATE OF TENNESSEE
Harold M. Brooks Jr. 3/6/95

MODIFIED

ROADWAY WIDTH VARIES FROM 121'-3¾"-113'-10"W/STD-11-1 RAIL
2015 ADT= 79,200
DESIGN SPEED= 60 MPH

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE NO. 1 WIDENING OF INTERSTATE 40 OVER CSX RAILROAD

BRIDGE I.D. NO. 19I00400039
STATION 93+50.00
DAVIDSON COUNTY
1995

DESIGNED BY Basma Fakri DATE 1/95
DRAWN BY D. BUSH DATE 2/95
SUPERVISED BY RLH & JHP DATE 2/95
CHECKED BY Basma DATE 5/95

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-66

PORTABLE MEDIAN BARRIER (L.F.) = 220'-0"

GN007.DGN

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1, 1995 EDITION).

LOADING: HS20-44 WITH ALTERNATE MILITARY.

DESIGN SPECIFICATIONS: AASHTO 1992 EDITION WITH ADDENDA INCLUDING THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES. (SEISMIC PERFORMANCE CATEGORY 'A' WITH ACCELERATION COEFFICIENT 0.075).

CONCRETE: TO BE CLASS "A" (CAST IN PLACE). f'c 3,000 PSI. EXCEPT AS NOTED OTHERWISE.

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE 'C' IN THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE. sEE SECTION 907 OF THE STANDARD SPECIFICATIONS.

SPECIAL NOTE FOR RAILROAD CROSSING: THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE DONE IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE CSX RAILROAD SO AS TO MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC.

PILES: TO BE HP10 X 42 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 55 TONS FOR THE ABUTMENT.

BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STD-11-1 EXCEPT AS MODIFIED AS SHOWN ON DRAWING NO. M-314-68.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED ½" IN DIAMETER LARGER THAN THE BAR, CLEANED. PACKED WITH NON-SHRINK GROUT AND ROTATED (NOT DRIVEN) TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A.

NOTE: PAVE SLOPES AND EXPOSED EARTH UNDER BRIDGES WITH 4" THICK CEMENT CONCRETE SLAB REINFORCED WITH NO. 4 GAGE WIRE FABRIC AT 6" CENTERS AND 58 LB PER 100 S.F. THE WIRE FABRIC SHALL BE PLACED AT ONE-HALF THE DEPTH OF THE SLAB AND EXTEND TO WITHIN 3" OF ITS EDGE WITH A 12" LAP REQ'D. ON ALL SHEETS. THE COST OF THE WIRE FABRIC REINFORCEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 709-04, REINFORCED CONCRETE SLOPE PAVEMENT. ONE-HALF INCH PREMOLDED EXPANSION JOINTS WITHOUT LOAD TRANSFERS SHALL BE FORMED ABOUT ALL STRUCTURES AND FEATURES PROJECTING THROUGH, IN, OR AGAINST THE SLAB. THE SLAB SHALL BE GROOVED PARALLEL WITH AND AT RIGHT ANGLES TO THE UNDER ROADWAY CENTER LINE AT 6' CENTERS. DEPTH OF GROOVE TO BE NOT LESS THAN 1". (SEE STD. DRAWING RD-SA-1 FOR LIMITS OF SLOPE PROTECTION.)

NON-PAY ITEMS: ONLY ITEMS SHOWN ON THE PROPOSAL AS PAY ITEMS WILL BE PAID FOR. COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND INCIDENTALS FOR THE ENTIRE CONTRACT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PAY ITEMS.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. A CLASS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITAM 604-04.01.

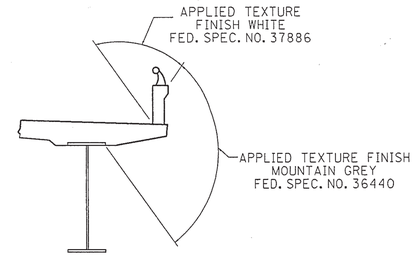
NOTE: THE FILLS AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



APPLIED TEXTURE FINISH SKETCH

NOTE: IN ADDITION TO THE SURFACES SHOWN IN THE APPLIED TEXTURE FINISH SKETCH ALL EXPOSED SURFACES OF THE WINGWALLS, ABUTMENT BEAMS, AND EXTERIOR PORTIONS OF ENDWALLS ARE TO RECEIVE AN APPLIED TEXTURE FINISH (MOUNTAIN GREY, FED. SPEC. NO. 36440). EXISTING BRIDGERAIL LEFT IN PLACE ALONG RIGHT EDGE OF SLAB AND CORRESPONDING PORTION OF EXISTING SLAB SHALL ALSO RECEIVE AN APPLIED TEXTURE FINISH (WHITE, FED. SPEC. NO. 37886).

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 2
(5)	202-04.01	REMOVAL OF STRUCTURES (EXISTING BR. NO. 1900400039)	L.S.	1		
(1)	204-02.01	DRY EXCAVATION (BRIDGES)	C.Y.	23		23
(4)	303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	3		3
	604-02.03	EPOXY COATED REINFORCING STEEL	LB.	3,638	3,506	132
	604-03.01	CLASS 'A' CONCRETE (BRIDGES)	C.Y.	8		8
	604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LB.	1,171		1,171
	604-03.09	CLASS 'D' CONCRETE (BRIDGE DECK)	C.Y.	13	13	
	604-04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	S.Y.	198		
	604-10.50	BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB)	S.Y.	10		
	606-02.03	STEEL PILES (10-INCH)	L.F.	51		51
(7)	620-05	CONCRETE PARAPET WITH STRUCTURAL TUBING	L.F.	102		
	709-04	REINFORCED CONCRETE SLOPE PAVEMENT	C.Y.	6		
(3)	710-09.01	6" PERF. PIPE WITH VERTICAL DRAIN SYSTEM	L.F.	13		13
	710-09.02	6" PIPE UNDERDRAIN	L.F.	19		19
(6)	714-01.01	STRUCTURE LIGHTING (BRIDGE NO. 1)	L.S.	1		

(1) EXCAVATION BASED ON FINAL PROFILE AT THE ABUTMENTS.

(2) NOTE: THE COST OF BITUMINOUS-FIBERBOARD AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS.

(3) NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.

(4) NOTE: GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STD. DWG. STD-10-1.

(5) NOTE: THE COST OF REMOVING THE EXTERIOR PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT, AND THE BRIDGERAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202-04.01.

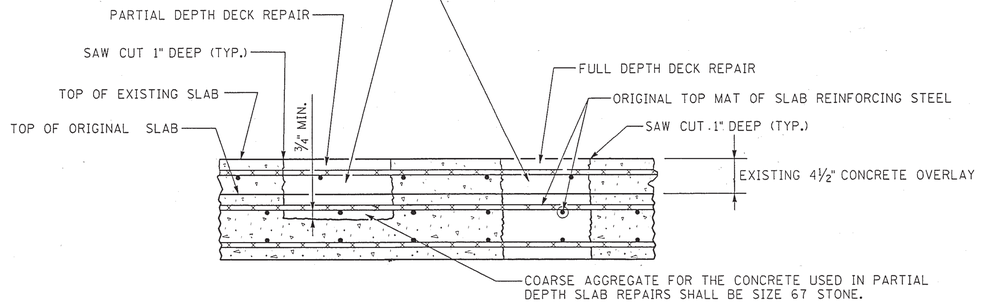
(6) LUMP SUM FOR STRUCTURAL LIGHTING, ITEM NO. 714-01.01, INCLUDES 100 FT. 2"ø CONDUIT WITH PULL WIRES, CONDUIT WITH PULL WIRES, 2 JUNCTION BOXES, 2 PULL BOXES, AND ALL NECESSARY MATERIALS FOR INSTALLATION OF STRUCTURE LIGHTING.

(7) CONSTRUCTION OF BRIDGERAIL SHALL BE ACCORDING TO STD. DWG. STD-11-1 EXCEPT FOR THE FOLLOWING:
1) THE END POSTS ARE TO BE BUILT ACCORDING TO DETAILS ON DWG. NO. M-314-69.

2) THE EXISTING BRIDGERAIL (METAL PORTION) SHALL BE REMOVED FROM EXISTING BRIDGE WITH CARE AND STORED IN A SAFE ENVIRONMENT FOR RE-USE.

3) BRIDGERAIL TO BE CONSTRUCTED WITH ANCHORAGE SYSTEM SO THAT EXISTING METAL RAIL SHALL BE RE-USED.

THE COST OF END POSTS ANCHORAGE SYSTEM, NEW PARAPET, AND REMOVING, STORAGE, AND REINSTALLING EXISTING METAL RAIL SHALL BE INCLUDED IN COST OF CONCRETE PARAPET WITH STRUCTURAL TUBING, ITEM NO. 620-05.



DETAIL SHOWING FULL AND PARTIAL DEPTH DECK REPAIR

REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF ¾" BELOW THE TOP BAR OF THE ORIGINAL TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE BLAST CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE HEADQUARTERS, BRIDGE INSPECTION AND REPAIR OFFICE. DECK REPAIR WILL BE PAID FOR UNDER ITEM NO. 604-10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), AND ITEM NO. 604-10.30, BRIDGE DECK REPAIR (FULL DEPTH OF SLAB). DURING PARTIAL DEPTH REPAIRS, SHOULD DETERIORATED CONCRETE BE ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB, THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604-10.30. POWER DRIVEN HAND TOOLS USED FOR THE REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL DEPTH REPAIRS ARE SUBJECT TO THE FOLLOWING RESTRICTIONS: 1) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 35 POUND CLASS SHALL NOT BE USED; 2) CHIPPING HAMMERS OF THE 15 POUND CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.

NOTE: ITEM NO. 604-10.30 AND 604-10.50 SHALL BE BID WITH THE CONTINGENCY THAT THESE ITEMS MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER.

HAROLD M. BROOKS — REGISTERED — STATE OF TENNESSEE — 6/12/95

DESIGNED BY BASMA FAKRI DATE 1-95
DRAWN BY JERRE PATTON DATE 4-95
SUPERVISED BY R.L.H. / J.H.P. DATE 4-95
CHECKED BY BASMA FAKRI DATE 5-95

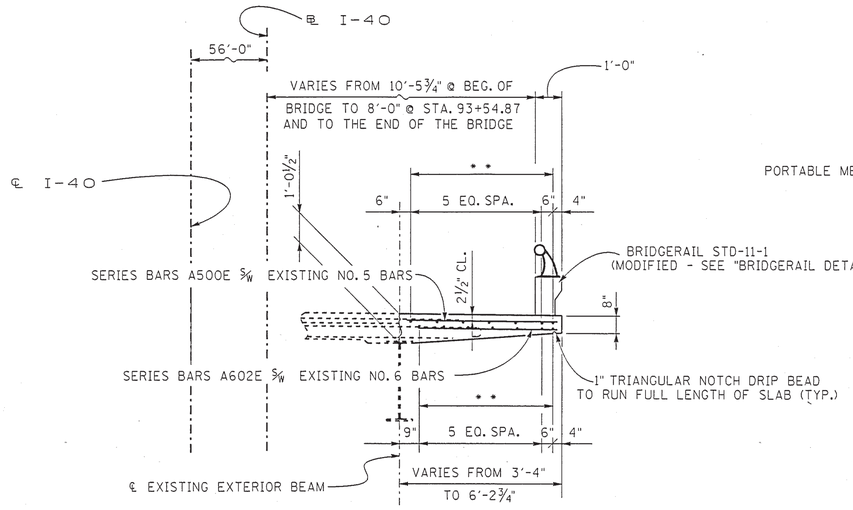
BRIDGE NO. 1
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
GENERAL NOTES AND ESTIMATED QUANTITIES
WIDENING OF INTERSTATE 40
OVER CSX RAILROAD
STATION 93+50.00
DAVIDSON COUNTY
1995

CORRECT Edward A Wasserman
ENGINEER OF STRUCTURES

M-314-67

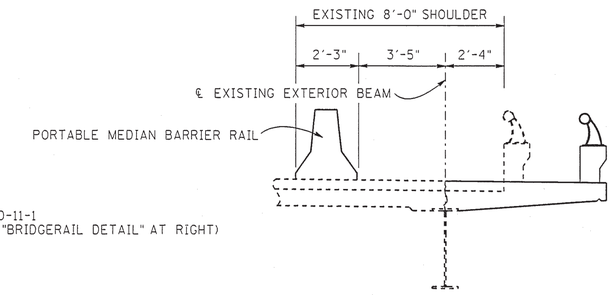
SUP003

NOTE: * * DENOTES BARS A600E 5/8" A601E 5/8" EXISTING NO. 6 BARS WHEREVER APPLICABLE.



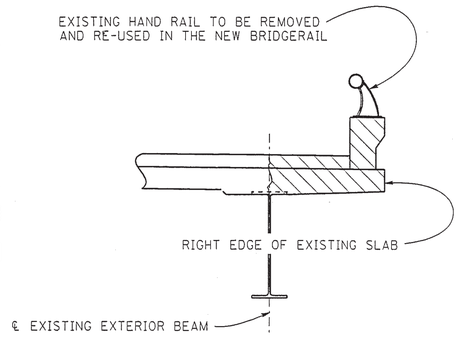
TYPICAL CROSS SECTION

NOTE: DASHED LINES DENOTE EXISTING STRUCTURE



DETAIL "A"

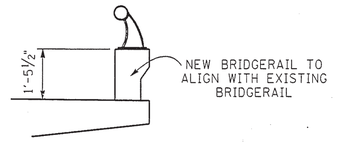
(SHOWING PLACEMENT OF PORTABLE BARRIER RAIL)



REMOVAL SKETCH

NOTE: CROSS-HATCHED AREAS ARE TO BE REMOVED.

⚠1 NOTE: CONTRACTOR TO SAW CUT TOP 1" OF SLAB BEFORE REMOVING SLAB. ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE TO PROVIDE A SPLICE WITH NEW STEEL. CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE EXISTING STEEL. THE CONTRACTOR IS NOT ALLOWED TO USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILARLY HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS.



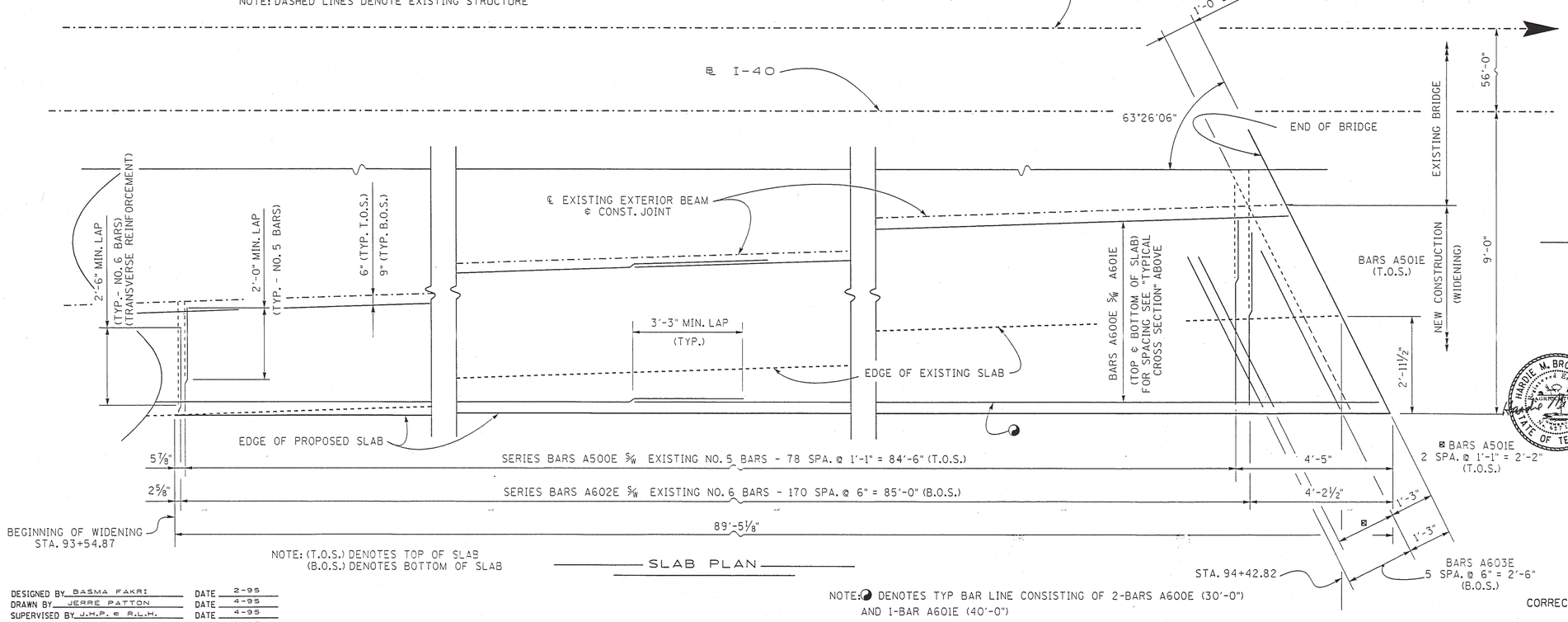
BRIDGERAIL DETAIL

STA. 93+54.87 TO STA. 94+41.60

NOTE: NEW BRIDGERAIL TO BE BUILT ACCORDING TO STD-11-1 EXCEPT AS SHOWN. WINGPOST TO BE MODIFIED ACCORDINGLY.

NOTE: NO PORTION OF THE PARAPET SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.

NOTE: WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEELFOR BRIDGE RAIL. THE PARAPET SHALL NOT BE POURED UNTIL THE SLAB IS POURED AND CURED. WHEN POURING PARAPET, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS FOR PARAPET RAILS. ALSO SEE DRAWING NO. STD-11-1.



NOTE: (T.O.S.) DENOTES TOP OF SLAB
(B.O.S.) DENOTES BOTTOM OF SLAB

SLAB PLAN

NOTE: ● DENOTES TYP BAR LINE CONSISTING OF 2-BARS A600E (30'-0") AND 1-BAR A601E (40'-0")

ESTIMATED QUANTITIES

CLASS "D" CONCRETE C.Y.	EPOXY COATED STEEL BAR REINFORCEMENT LBS.
13	3,506

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	12-12-95	BF	ADDED NOTE

HAROLD M. BROOKS, JR. 14 REGISTERED ENGINEER STATE OF TENNESSEE

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
WIDENING OF INTERSTATE 40
OVER CSX RAILROAD
DAVIDSON COUNTY
STATION 93+50.00
1995

DESIGNED BY BASMA FAKRI DATE 2-95
DRAWN BY JERRE PATTON DATE 4-95
SUPERVISED BY J.H.P. & R.L.H. DATE 4-95
CHECKED BY BASMA FAKRI DATE 6-95

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-68

ABT003

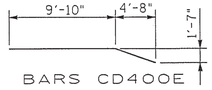
PILE DATA TABLE **

	1	2
PILE CUT-OFF ELEVATION		
PILE TIP ELEVATION		
IN PLACE PILE LENGTH		

**NOTE TO CONTRACTOR AND CONSTRUCTION OFFICE: THE BLANKS IN THIS TABLE ARE TO BE FILLED IN BY THE CONSTRUCTION OFFICE AND/OR FIELD ENGINEER GIVING AS-BUILT-CONDITIONS. AFTER COMPLETION IT IS TO BE SENT TO THE DIVISION OF STRUCTURES TO BECOME PART OF THE FINAL BRIDGE DOCUMENTS.

WINGPOST QUANTITIES

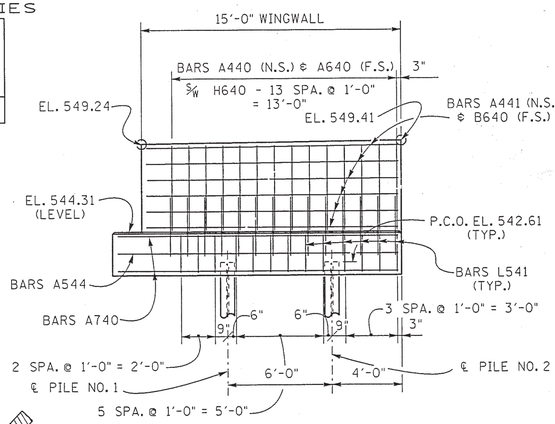
CLASS "A" CONCRETE C.Y.	EPOXY COATED REINFORCING STEEL LBS.
1.35	557



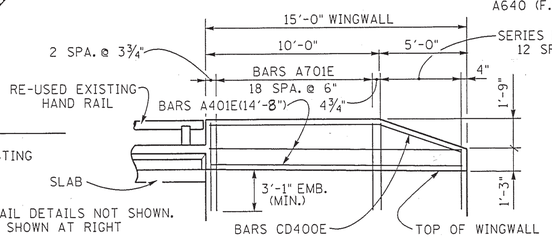
REMOVAL SKETCH

NOTE: CROSS-HATCHED AREAS DENOTE EXISTING STRUCTURE TO BE REMOVED.

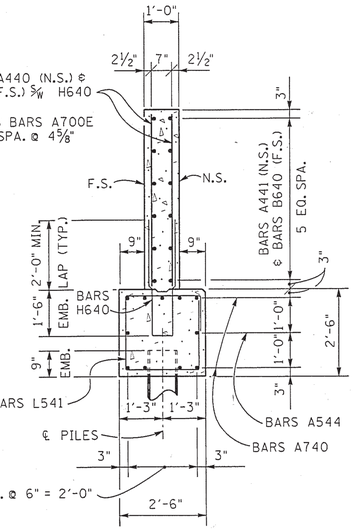
NOTE: SEE STANDARD DWG. STD-11-1 FOR BRIDGERAIL DETAILS NOT SHOWN. RAIL AND WINGPOST TO BE MODIFIED AS SHOWN AT RIGHT AND ON DWG. NO. M-314-68.



ELEVATION "X-X"



ELEVATION "X-X"
(SHOWING MODIFICATIONS TO WINGPOST)



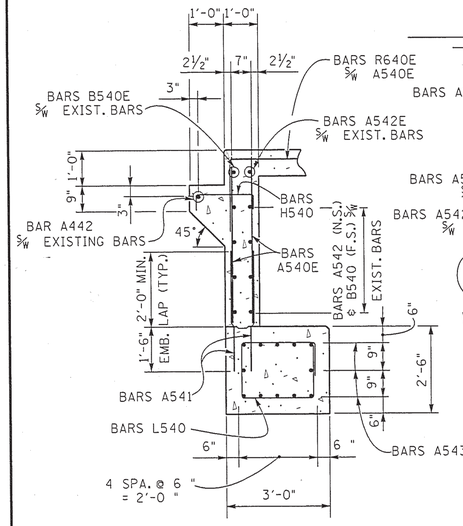
SECTION "A-A"

NOTE: AS A MINIMUM THE TOP 12 INCHES OF THE ENDWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.

NOTE: COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE BRIDGE RAIL SYSTEM.

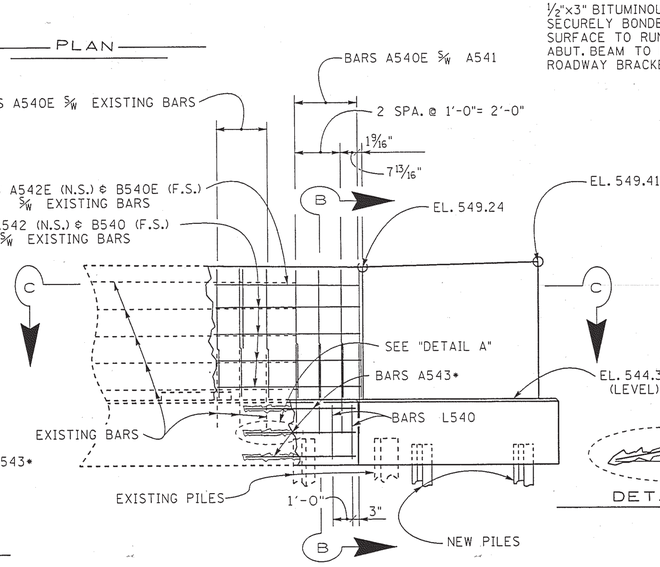
ESTIMATED QUANTITIES

CLASS "A" CONCRETE C.Y.	STEEL BAR REINFORCEMENT LBS.	EPOXY COATED STEEL BAR REINFORCEMENT LBS.
8	1.171	132

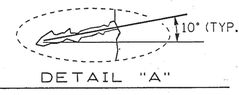


SECTION "B-B"

*NOTE: BARS A543 TO BE DRILLED AND GROUTED INTO EXISTING ABUTMENT BEAM.
EMBED.= 2'-0"
PROJ. = 3'-2"



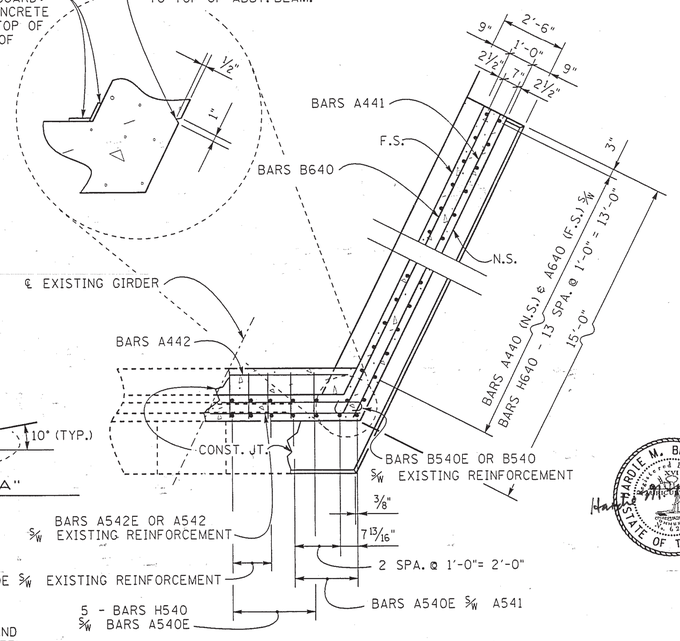
ELEVATION



DETAIL "A"

½" V-GROOVE (TYP.) TO RUN FROM TOP OF WINGWALL TO TOP OF ABUT. BEAM.

½"x3" BITUMINOUS FIBERBOARD SECURELY BONDED TO CONCRETE SURFACE TO RUN FROM TOP OF ABUT. BEAM TO BOTTOM OF ROADWAY BRACKET.



SECTION "C-C"

NOTE: DASHED LINES DENOTE EXISTING STRUCTURE

NOTE: WHEN REMOVING PORTIONS OF EXISTING ABUTMENT AND ENDWALL, CARE SHALL BE TAKEN TO LEAVE EXPOSED STEEL REINFORCEMENT IN PLACE AND UNDAMAGED.

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

BRIDGE NO. 1
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 2
WIDENING OF INTERSTATE 40 OVER CSX RAILROAD
STATION 93+50.00
DAVIDSON COUNTY
1995

HAROLD M. BROOKS — 12/95 — STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY	BASMA FAKRI	DATE 1-95
DRAWN BY	JERRE PATTON	DATE 3-95
SUPERVISED BY	R.L.H. - J.H.P.	DATE 3-95
CHECKED BY	BASMA FAKRI	DATE 5-95

M-314-69

BOS006.DGN

BILL OF STEEL

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

SUPERSTRUCTURE-EPOXY COATED

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
SERIES	SLAB	5	1	LENGTH VARIES FROM 2'-10¾"				342'-4"
A500E				TO 5'-9¾" IN INC. OF 0/16"				
				(79 BARS)				
A501E	SLAB	5	3					5'-0"
A600E	SLAB	6	28					30'-0"
A601E	SLAB	6	14					40'-0"
SERIES	SLAB	6	1	LENGTH VARIES FROM 2'-6⅛"				656'-4"
A602E				TO 5'-2" IN INC. OF 0⅜"				
				(171 BARS)				
A603E	SLAB	6	6					5'-0"

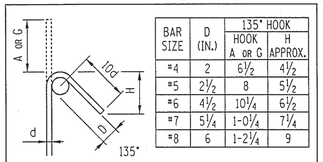
ABUTMENT NO. 2

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A440	WINGWALL	4	14					4'-8"
A441	WINGWALL	4	6					14'-9"
A442	ROADWAY BRACKET	4	1					5'-8"
A541	ABUTMENT BEAM	5	8					3'-6"
A542	ENDWALL	5	4					6'-9"
A543	ABUTMENT BEAM	5	12					5'-2"
A544	WING BEAM	5	2					16'-8"
A640	WINGWALL	6	14					4'-8"
A740	WING BEAM	7	9					16'-8"
B540	ENDWALL	5	4	6'-9"				7'-4"
B640	WINGWALL	6	6	15'-0"				15'-8"
H540	RDWY. BRKT.	5	6	1'-8"	6"			2'-8"
H640	WING BEAM	6	14	8"	3'-6"			7'-8"
L540	ABUTMENT BEAM	5	2	2'-8"	1'-0"	2'-2"		10'-8"
L541	WING BEAM	5	13	2'-2"	1'-0"	2'-2"		9'-8"

ABUTMENT NO. 2-EPOXY

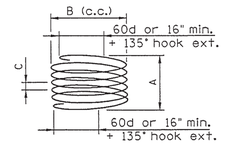
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A540E	ENDWALL	5	14					4'-8"
A542E	ENDWALL	5	1					6'-9"
B540E	ENDWALL	5	1	6'-9"				7'-4"
R640E	ENDWALL	6	7	2'-0"	2'-0"			4'-0"

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH

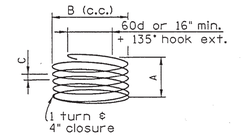


BAR SIZE	D (IN.)	135° HOOK HOOK A OR G	135° HOOK H APPROX.
#4	2	6½	4½
#5	2½	8	5½
#6	4½	10¼	6½
#7	5¼	1-0¼	7¼
#8	6	1-2¼	9

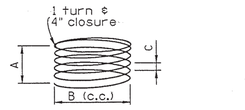
135° SEISMIC STIRRUP/TIE HOOK DIMENSIONS (ALL GRADES)



BARS M



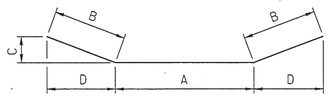
BARS TB



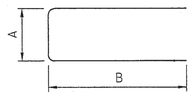
BARS CF



BARS A



BARS E



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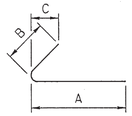
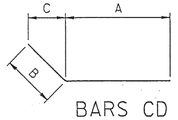
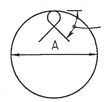


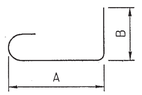
BARS CB



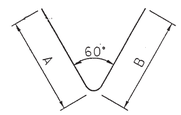
BARS CD



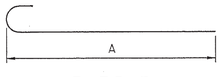
BARS T



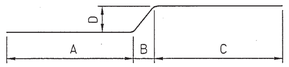
BARS YA



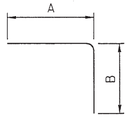
BARS VA



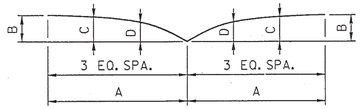
BARS B



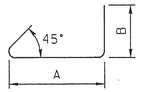
BARS F



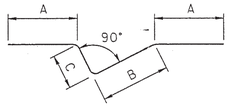
BARS R



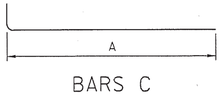
BARS V



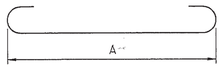
BARS YB



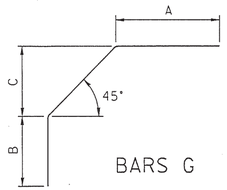
BARS JX



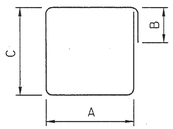
BARS C



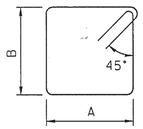
BARS D



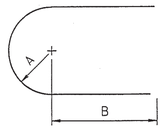
BARS G



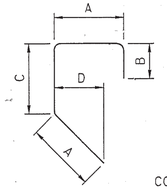
BARS L



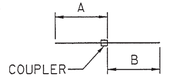
BARS LS



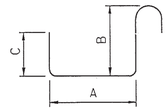
BARS XA



BARS J



BARS CU



BARS HB

REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

NOTE: DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOTE: THE SUFFIX E FOR BARS SO MARKED DENOTES EPOXY COATED REINFORCEMENT.

HAROLD MARDIS BROOKS, JR. 12/95
REGISTERED ENGINEER
STATE OF TENNESSEE

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BILL OF STEEL
WIDENING OF INTERSTATE 40
OVER C.S.X. RAILROAD
STATION 93+50.00
DAVIDSON COUNTY
1995

DESIGNED BY BASMA FAKRI DATE 3-95
DRAWN BY J. PATTON DATE 4-95
SUPERVISED BY R.L.H. / J.H.P. DATE 4-95
CHECKED BY BASMA FAKRI DATE 5-95

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

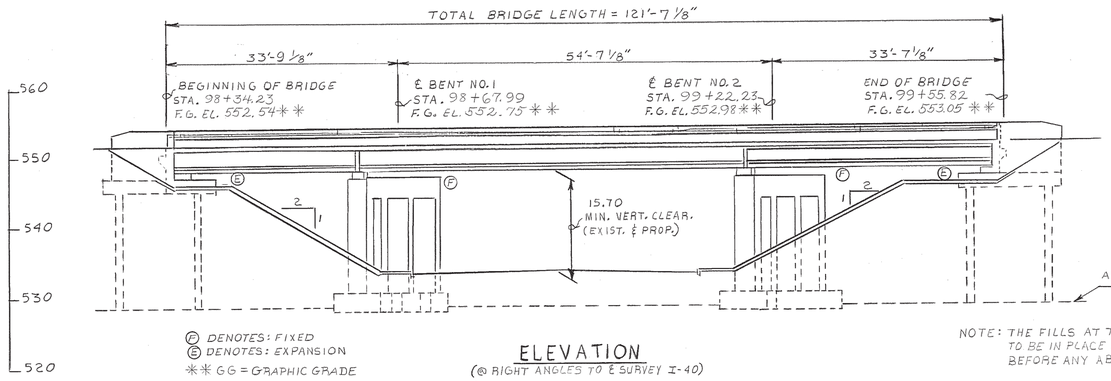
M-314-70

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

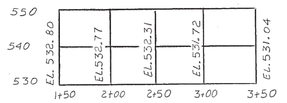
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

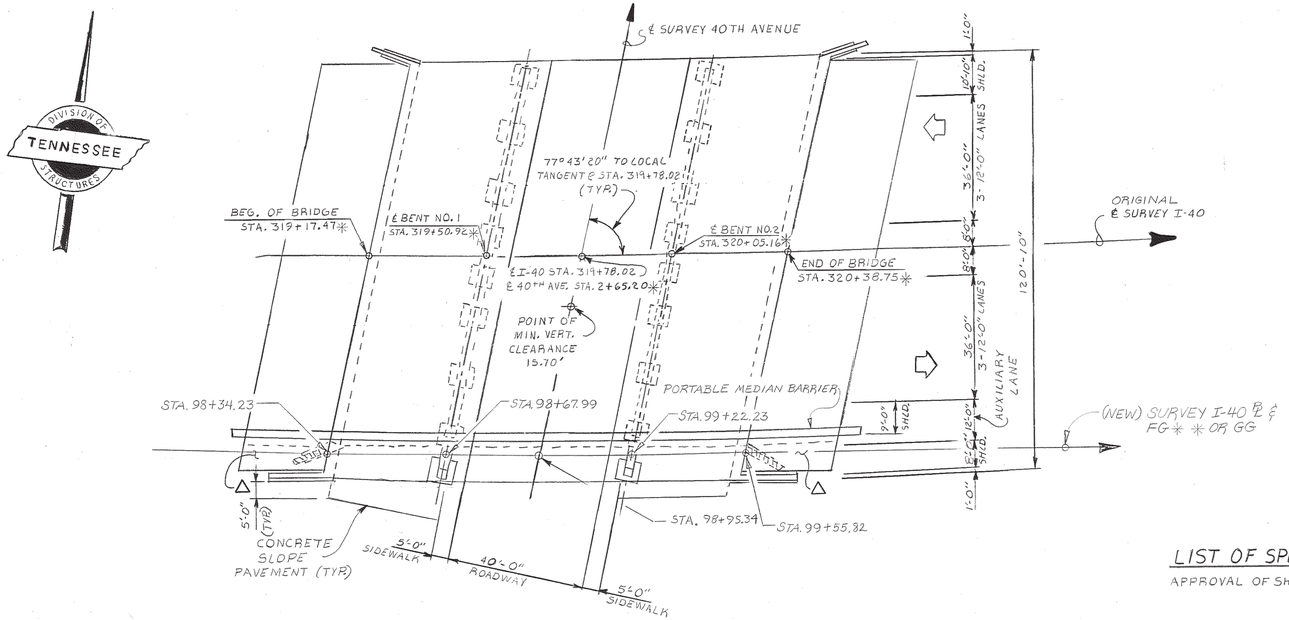


ELEVATION
(@ RIGHT ANGLES TO ℄ SURVEY I-40)

NOTE: THE FILLS AT THE ENDS OF THE BRIDGE TO BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.



40TH AVE. GRADE SKETCH



PLAN

△ DENOTES: PAVEMENT AT BRIDGE ENDS SEE STANDARD DRAWING STD-1-5.

* NOTE: STATIONING BASED ON ORIGINAL SURVEY. TO BE USED FOR REFERENCE ONLY.

I-40 HORIZONTAL CURVE DATA (BASE LINE)

PI	102+23.854
N	663816.556
E	1722518.222
Δ	16°48'53"
Dc	1°14'02"
R	4643.487
L	1362.737
T	686.302
E	50.413
L.C.	1357.852

LIST OF DRAWINGS

	DWG. NO.	LAST REV. DATE
LAYOUT OF BRIDGE	M-314-71	
GENERAL NOTES AND ESTIMATED QUANTITIES	M-314-72	
FOUNDATION DATA	M-314-73	
SUPERSTRUCTURE	M-314-74	12/12/95
SUPERSTRUCTURE DETAILS	M-314-75	
SUPERSTRUCTURE DETAILS	M-314-76	
PRESTRESSED I-BEAM DETAILS SPAN NO.1 AND 3	M-314-77	
PRESTRESSED I-BEAM DETAILS SPAN NO. 2	M-314-78	
ABUTMENT NO. 1	M-314-79	
ABUTMENT NO. 2	M-314-80	
BENT NO. 1 AND 2	M-314-81	
FINAL FOUNDATION DATA	M-314-82	
BILL OF STEEL	M-314-83	

REFERENCE BRIDGE DRAWINGS

DWGS. K-66-19 THROUGH K-66-26 AND K-38-154
DWGS. M-1444-91 THROUGH M-1444-101

LIST OF STANDARD DRAWINGS

	DWG. NO.	LAST REV. DATE
* PAVEMENT AT BRIDE ENDS	STD-1-5	5-01-95
STD. PILE DETAILS	STD-5-1	10-25-93
STD. PILE DETAILS	STD-5-2	10-26-92
* STANDARD SEISMIC DETAILS	STD-6-1	5-01-95
* REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLAB	STD-9-1	12-19-94
* BRIDGE RAILING W/STRUCTURAL TUBING	STD-11-1	3-28-94
* STD. DETAILS AND INT. DIAPHRAGM DETAILS FOR I-BEAMS	STD-14-2	NO DATE

* DENOTES: THESE DRAWINGS TO BE PRINTED WITH PLANS.

LIST OF SPECIAL PROVISIONS

	PROVISION NO.	LAST REV. DATE
APPROVAL OF SHOP DRAWINGS	105A	3-06-95



118'-10" ROADWAY WITH EXISTING LEFT CONCRETE RAIL AND RIGHT BRIDGERAIL STD-11-1
EST. 2005 ADT = 97,000

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
LAYOUT OF BRIDGE
WIDENING OF INTERSTATE 40
OVER
40TH AVENUE
BRIDGE I.D. NO. 19I00400041
STATION 98+95.34
DAVIDSON COUNTY
1995

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY KEN LITTON DATE 4-95
DRAWN BY BUTCH McGLOTHIN DATE 4-95
SUPERVISED BY B.L.H./J.H.P. DATE 4-95
CHECKED BY _____ DATE _____

315213

M-314-71

GN008.DGN

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1, 1995 EDITION).

LOADING: HS20-44 WITH ALTERNATE MILITARY.

DESIGN SPECIFICATIONS: AASHTO 1992 EDITION WITH ADDENDA INCLUDING THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES. (SEISMIC PERFORMANCE CATEGORY 'A' WITH ACCELERATION COEFFICIENT 0.075).

CONCRETE: TO BE CLASS "A" (CAST IN PLACE). f'c 3,000 PSI. EXCEPT AS NOTED OTHERWISE.

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE C IN ARTICLE 604.23 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE. SEE SECTION 907 OF THE STANDARD SPECIFICATIONS.

SPECIAL NOTE - FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 6' DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

PILES: TO BE HP10 X 42 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 55 TONS FOR THE ABUTMENTS.

NOTE: THE FILLS AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

TRAFFIC: DURING CONSTRUCTION EASTBOUND TRAFFIC TO HAVE 3-12'-0" LANES AT ALL TIMES, PLUS AN 8'-0" SHOULDER ON THE CENTER (OR LEFT) AND 7'-0" CLEAR TO OUTSIDE (OR EDGE) OF PORTABLE MEDIAN BARRIER.

NOTE: ALL FILL SHALL BE IN PLACE PRIOR TO EXCAVATING FOR BENT FOOTINGS. AFTER CONSTRUCTING THE BENT, EXTREME CARE SHALL BE TAKEN WHEN BACKFILLING SO AS NOT TO DAMAGE OR MISALIGN THE BENT.

BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STD-11-1 EXCEPT USE THE EXISTING METAL RAIL. (SEE NOTE 8 FOR EXCEPTIONS AND DETAILS.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED ½" IN DIAMETER LARGER THAN THE BAR, CLEANED PACKED WITH NON-SHRINK GROUT AND DRIVEN TO ITS' SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED ¼" IN DIAMETER LARGER THAN THE BAR, CLEANED PACKED WITH EPOXY GROUT AND DRIVEN TO ITS' SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A.

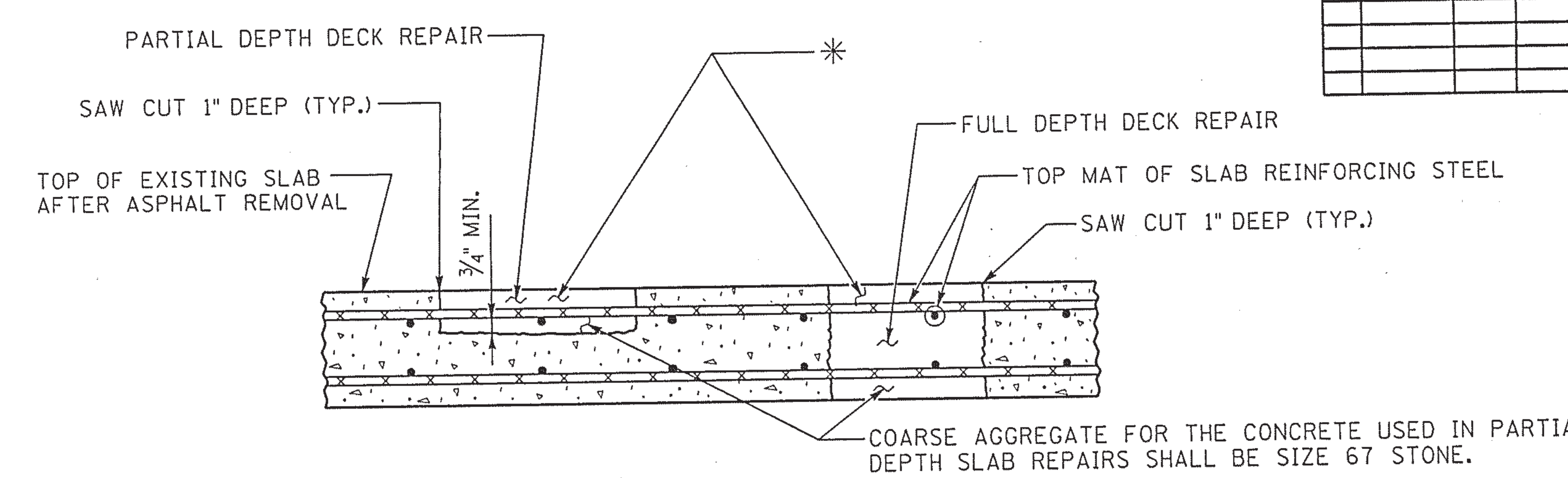
PAVE SLOPES AND EXPOSED EARTH UNDER BRIDGES WITH 4" THICK CEMENT CONCRETE SLAB REINFORCED WITH NO. 4 GAGE WIRE FABRIC @ 6" CENTERS AND 58 LB. PER 100 S.F. THE WIRE FABRIC REINFORCMENT SHALL BE PLACED AT ONE-HALF THE DEPTH OF THE SLAB AND EXTEND TO WITHIN 3" OF ITS' EDGE WITH A 12" LAP REQ'D. ON ALL SHEETS. THE COST OF THE WIRE FABRIC REINFORCEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 709-04, REINFORCED CONCRETE SLOPE PAVEMENT. ONE-HALF INCH PREMOULDED EXPANSION JOINTS WITHOUT LOAD TRANSFERS SHALL BE FORMED ABOUT ALL STRUCTURES AND FEATURES PROJECTING THROUGH, IN OR AGAINST THE SLAB. THE SLAB SHALL BE GROOVED PARALLEL WITH AND AT RIGHT ANGLES TO THE UNDER ROADWAY CENTER LINE AT 6' CENTERS. DEPTH OF GROOVE TO BE NOT LESS THAN 1". SEE LAYOUT DWG. NO. M-314-71 FOR LIMITS OF SLOPE PROTECTION.

NON-PAY ITEMS: ONLY ITEMS SHOWN ON THE PROPOSAL AS PAY ITEMS WILL BE PAID FOR. COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND INCIDENTALS FOR THE ENTIRE CONTRACT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PAY ITEMS.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. A CLASS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITAM 604-04.01 AND 604-04.02.

NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDERS.

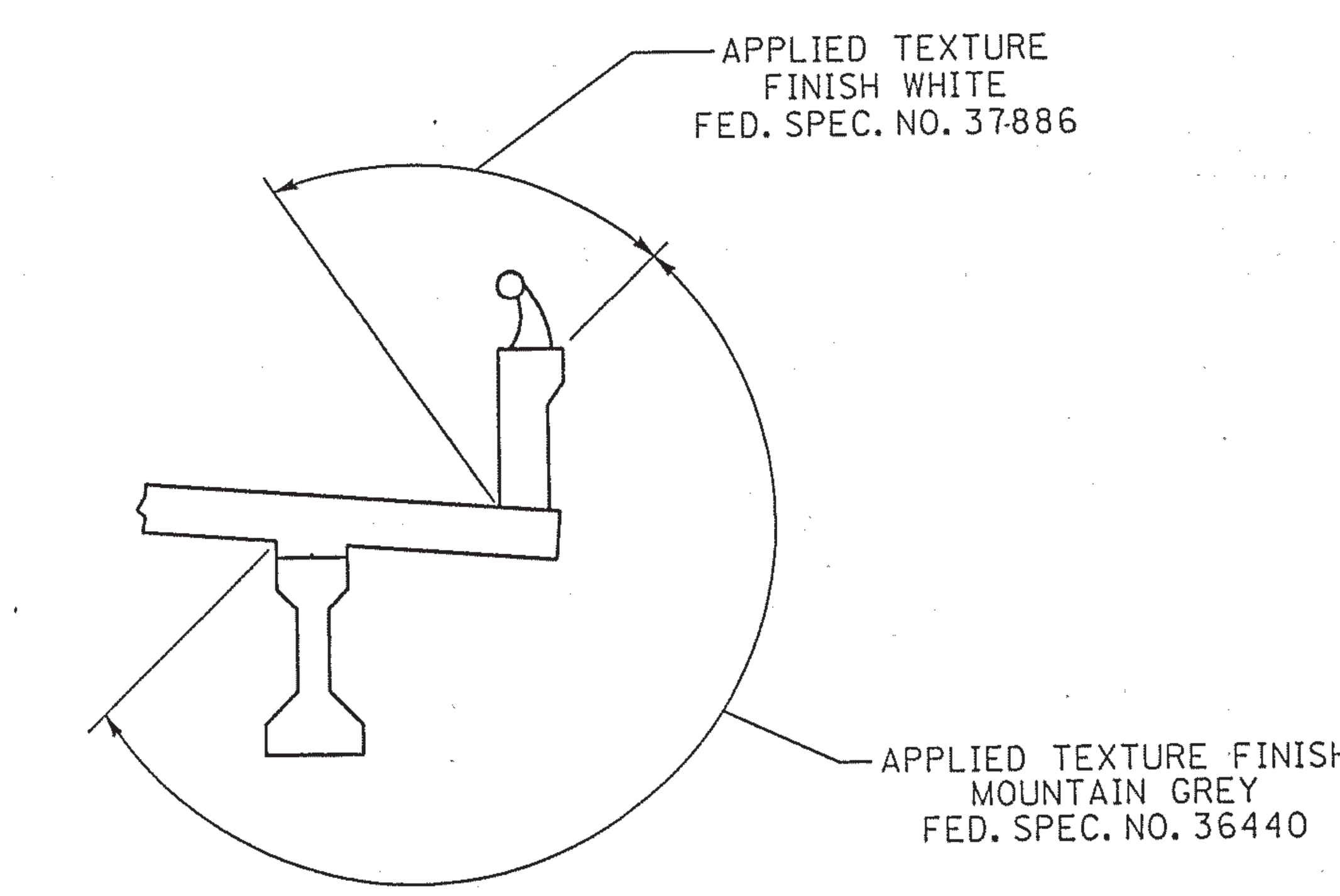
* CONCRETE FOR DECK REPAIRS TO BE HIGH STRENGTH CONCRETE. THE MIX TO MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, CLASS 'A', EXCEPT THE CEMENT CONTENT SHALL BE A MINIMUM OF 714 LBS. A HIGH RANGE, WATER REDUCING ADMIXTURE (SUPER-PLASTICIZER) SHALL BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER. THE WATER CEMENT RATIO SHALL BE A MAXIMUM OF 0.40, NO FLY ASH REPLACEMENT WILL BE PERMITTED AND THE CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF f'c = 3,000 p.s.i. IN 18 HOURS.



DETAIL SHOWING FULL AND PARTIAL DEPTH DECK REPAIR

REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF ¾" BELOW THE TOP BAR OF THE TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE BLAST CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE HEADQUARTERS, BRIDGE INSPECTION AND REPAIR OFFICE. DECK REPAIR WILL BE PAID FOR UNDER ITEM NO. 604-10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), AND ITEM NO. 604-10.30, BRIDGE DECK REPAIR (FULL DEPTH OF SLAB). DURING PARTIAL DEPTH REPAIRS, SHOULD DETERIORATED CONCRETE BE ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB, THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604-10.30. POWER DRIVEN HAND TOOLS USED FOR THE REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL DEPTH REPAIRS ARE SUBJECT TO THE FOLLOWING RESTRICTIONS: 1) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 35 POUND CLASS SHALL NOT BE USED; 2) CHIPPING HAMMERS OF THE 15 POUND CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.

NOTE: ITEM NO. 604-10.30 AND 604-10.50 SHALL BE BID WITH THE CONTINGENCY THAT THESE ITEMS MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER.



APPLIED TEXTURE FINISH SKETCH

NOTE: IN ADDITION TO THE SURFACES SHOWN IN THE APPLIED TEXTURE FINISH SKETCH ALL EXPOSED SURFACES OF THE WINGWALLS, ABUTMENT BEAMS, BENTS AND EXTERIOR PORTIONS OF ENDWALLS (EXISTING AND NEW) ARE TO RECEIVE AN APPLIED TEXTURE FINISH (MOUNTAIN GREY, FED. SPEC. NO. 36440.

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 1	BENT NO. 1	BENT NO. 2	ABUT. NO. 2
(6)	202-04.02	REMOVAL OF STRUCTURES (EXIST. BR. NO.1900400041)	L.S.	1					
(2)	204-02.01	DRY EXCAVATION (BRIDGES)	C.Y.	102		29	22	22	29
(2)	204-04.01	ROCK EXCAVATION (BRIDGES)	C.Y.	8			4	4	
	204-05	ROCK DRILLING BRIDGES	L.F.	12			6	6	
(9)	303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	10		5			5
	604-02.03	EPOXY COATED REINFORCING STEEL	LB.	16,428	16,428				
(7)	604-03.01	CLASS 'A' CONCRETE (BRIDGES)	C.Y.	46		11	12	12	11
	604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LB.	6,614	678	1,398	1,562	1,578	1,398
(1)	604-03.04	PAVEMENT AT BRIDGE ENDS	S.Y.	68					
	604-03.09	CLASS "D" CONCRETE (BRIDGE DECK)	C.Y.	51	51				
	604-04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	S.Y.	335					
	604-10.50	BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB)	S.Y.	20					
	606-02.03	STEEL PILES (10-INCH)	L.F.	124					
(4)	615-01.02	PRESTRESSED CONCRETE I-BEAM (TYPE II)	L.F.	118					
(8)	620-05	CONCRETE PARAPET WITH STRUCTURAL TUBING	L.F.	149					
	709-04	REINFORCED CONCRETE SLOPE PAVEMENT	C.Y.	10					
(5)	710-09.01	6" PERF. PIPE WITH VERTICAL DRAIN SYSTEM	L.F.	42		21			21
	710-09.02	6" PIPE UNDERDRAIN	L.F.	32		16			16

(1) NOTE: SQUARE YARD FOR PAVEMENT AT BRIDGE ENDS SHALL BE MEASURED AS ROAD SURFACE AREA AND SHALL INCLUDE ALL CONCRETE, REINFORCING STEEL, PILES, JOINT MATERIAL, BRIDGE END DRAIN SYSTEM, DRILL IN BARS A59-E AND ANY OTHER INCIDENTALS NECESSARY FOR COMPLETE INSTALLATION. PRIOR TO CONSTRUCTION OF PAVEMENT AT BRIDGE ENDS, THE THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL. (DRILL-IN-BARS ARE SPACED AT 1'-0" C. TO C., EMBEDMENT IS 1'-0", TOTAL LENGTH IS 2'-0" AND THERE ARE 24 BARS AT EACH END.

(2) EXCAVATION BASED ON FINAL PROFILE AT THE ABUTMENTS AND EXISTING GROUNDLINE AT THE BENTS.

(3) NOTE: THE COST OF BITUMINOUS-FIBERBOARD AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS.

(4) NOTE: COST OF ELASTOMERIC PADS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR THE PRESTRESSED BEAM.

(5) NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.

(6) NOTE: THE COST OF REMOVING THE EXISTING PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT AND THE BRIDGERAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202-04.02.

(7) NOTE: THE COST OF ALL MATERIALS AND LABOR NECESSARY FOR THE INSTALLATION OF 4 ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604-03.01, CLASS "A" CONCRETE (BRIDGES).

(8) NOTE: CONSTRUCTION OF BRIDGERAIL SHALL BE ACCORDING TO STD-11-1 EXCEPT FOR THE FOLLOWING:
A.) THE ENDPOSTS ARE TO BE BUILT ACCORDING TO DETAILS ON DWGS. NO. M-314-79 AND 80.
B.) THE EXISTING BRIDGERAIL (METAL PORTION) SHALL BE REMOVED FROM EXISTING BRIDGE WITH CARE AND STORED IN A SAFE ENVIRONMENT FOR REUSE.
C.) BRIDERAIL SHALL BE CONSTRUCTED WITH ANCHORAGE SYSTEM SO THAT EXISTING METAL RAIL CAN BE REUSED.
THE COST OF ENDPOSTS ANCHORAGE SYSTEM, AND REMOVING, STORING AND REINSTALLING EXISTING METAL RAIL SHALL BE INCLUDED IN THE COST OF CONCRETE PARAPET WITH STRUCTURAL TUBING, ITEM # 620-05.

(9) NOTE: GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STANDARD DRAWING STD-10-1.

DESIGNED BY KEN LITTON DATE 1-95
DRAWN BY M.R. MANNCHEN DATE 4-95
SUPERVISED BY R.L.H. / J.H.P. DATE 4-95
CHECKED BY ____ DATE ____

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

HARDIE M. BROOKS, JR. Registered Engineer No. 6271 STATE OF TENNESSEE — Hardie M. Brooks Jr 6/13/95

BRIDGE NO. 2
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
GENERAL NOTES AND ESTIMATED QUANTITIES
WIDENING OF INTERSTATE 40 OVER 40TH AVENUE
STATION 98+95.34
DAVIDSON COUNTY
1995

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

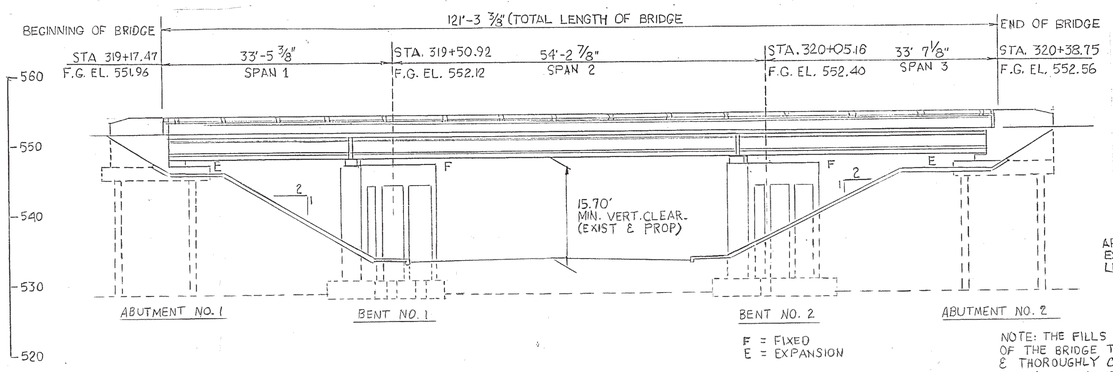
M-314-72

Const. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

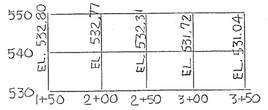
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

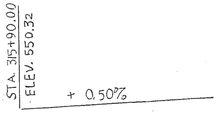


ELEVATION @ RIGHT ANGLES TO ℄ SURVEY I-40

NOTE: THE FILLS AT THE ENDS OF THE BRIDGE TO BE IN PLACE & THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN

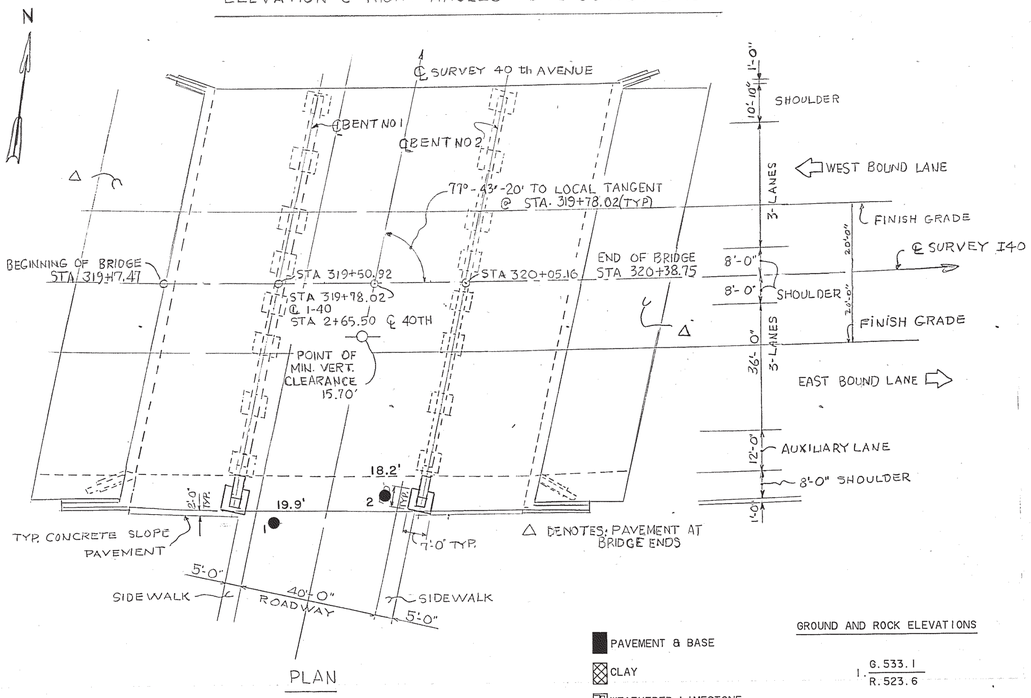


40th AVE. GRADE SKETCH



I-40 GRADE SKETCH

ELEVATIONS SHOWN ARE BASED ON FINISHED GRADES

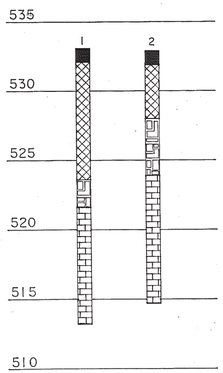


PAVEMENT & BASE
CLAY
WEATHERED LIMESTONE
LIMESTONE

GROUND AND ROCK ELEVATIONS

1. G. 533.1 / R. 523.6
2. G. 532.9 / R. 528.0

CORE NO. 1 ● 19.9' TERMINATED DEPTH
2



B.M. #3-R.R. Spike in 5th power pole North of Charlotte Ave., West side of 40th Ave., 41' South of South R/W Elev. 533.745

B.M. #4-R.R. Spike in 2nd power pole South of Delaware Ave., East of 40th Ave., 45' North of North R/W Elev. 531.465

NOTES:

REQUIRED:

1) SUFFICIENT GROUND, ROCK AND CORING INFORMATION FOR BRIDGE FOUNDATION.

2) APPROXIMATE EXISTING GROUND AND ROCK LINE.

NOTE: THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BRIDGE NO. 2
FOUNDATION DATA
WIDENING
I-40 OVER 40th AVENUE
STATION 98+95.34
BRIDGE I.D. NO. 19I0040041
DAVIDSON COUNTY
1995

DESIGNED BY _____ DATE _____
DRAWN BY _____ DATE _____
SUPERVISED BY _____ DATE _____
CHECKED BY _____ DATE _____

CORRECT _____ ENGINEER OF STRUCTURES

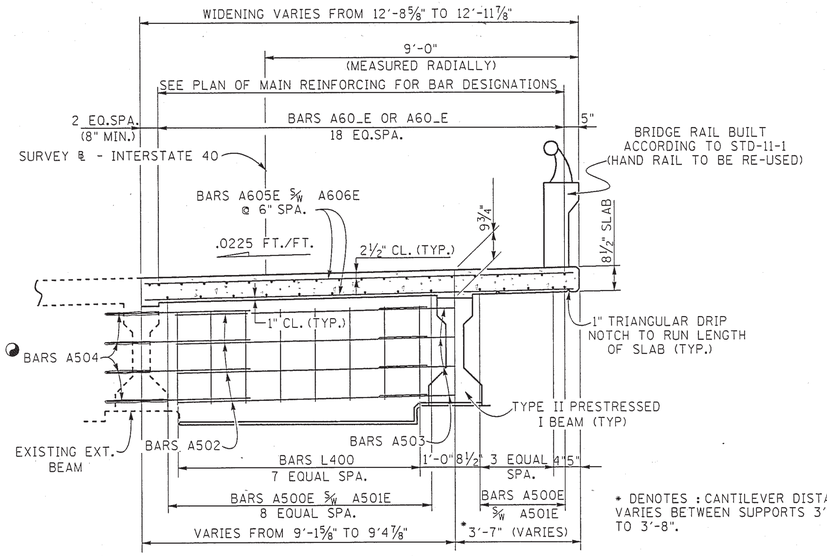
APPROVED _____ DIRECTOR OF HIGHWAYS

M-314-73

19005-3130-44

213313

SUP002.DGN



◕ BARS A504 TO BE GROUTED INTO DRILLED HOLES. (2'-2" PROJ. - 1'-0" EMBED.)

* DENOTES : CANTILEVER DISTANCE VARIES BETWEEN SUPPORTS 3'-7" TO 3'-8".

TYPICAL CROSS SECTION

LOOKING FORWARD ON SURVEY

NOTE: OUTSIDE EDGE OF SLAB AND BRIDGE RAIL TO CONFORM TO HORIZONTAL CURVE.

DEAD LOAD CORRECTION CURVE: THIS CURVE IS FOR DEAD LOAD SLAB AND ALL DEAD LOADS THAT ARE APPLIED AFTER THE SLAB IS IN PLACE.

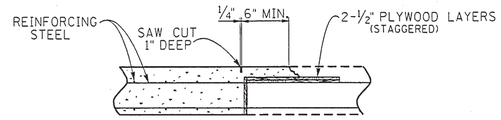
NOTE: WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR BRIDGE RAIL. THE BRIDGE RAIL SHALL NOT BE PORED UNTIL THE SLAB IS POURED AND CURED. WHEN POURING BRIDGE RAIL, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS FOR THE RE-USED HAND RAILING.

NOTE: THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE THE BEAMS TO PREVENT DAMAGE DUE TO TWISTING OR OVERTURNING DURING ALL PHASES OF CONSTRUCTION. IT IS STRONGLY RECOMMENDED THAT THE TEMPORARY ERECTION DIAPHRAGMS BE INSTALLED PRIOR TO PLACING ANY LOADS ON THE GIRDERS. HOWEVER, TEMPORARY ERECTION DIAPHRAGMS MUST BE IN PLACE IN THE SPAN AT THE TIME THE SLAB IS POURED IN SAID SPAN.

SPECIAL NOTE FOR ANCHOR BOLTS AT BENTS: ANCHOR BOLT ASSEMBLIES AT BENTS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING STD-6-1.

NOTE: SUPPORT DIAPHRAGMS AT BENTS SHALL BE POURED CONCURRENTLY WITH THE DECK SLAB AND INCLUDED IN THE QUANTITY FOR ITEM 604-03.09.

NOTE: NO PORTION OF THE PARAPET SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.



SLAB CONSTRUCTION JOINT DETAIL

DECK CONCRETE POURING SEQUENCE: SLAB CONSTRUCTION JOINTS MAY BE LOCATED AT THE CONTRACTOR'S OPTION SUBJECT TO THE FOLLOWING:

1) NO CONSTRUCTION JOINT MAY BE LOCATED CLOSER THAN 10 FEET OR FURTHER THAN 15 FEET FROM AN INTERIOR SUPPORT.

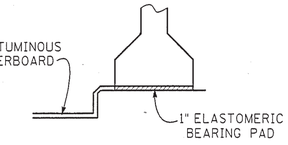
2) THE SLAB IN THE MIDDLE SECTION OF BOTH ADJACENT SPANS MUST BE POURED TO WITHIN AT LEAST 15 FEET OF THE SUPPORTS EITHER PRIOR TO OR CONCURRENTLY WITH THE SLAB OVER AN INTERIOR SUPPORT.

CONST. NO. 19005-3130-44

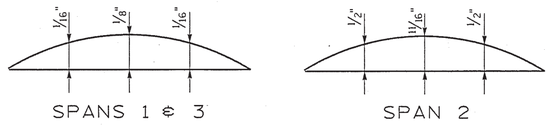
PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	12-12-95	BF	ADDED NOTE



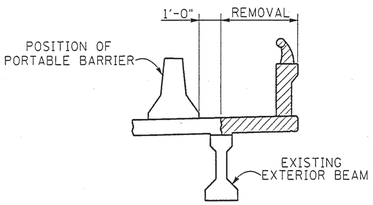
DETAIL @ SUPPORT



SPANS 1 & 3 SPAN 2

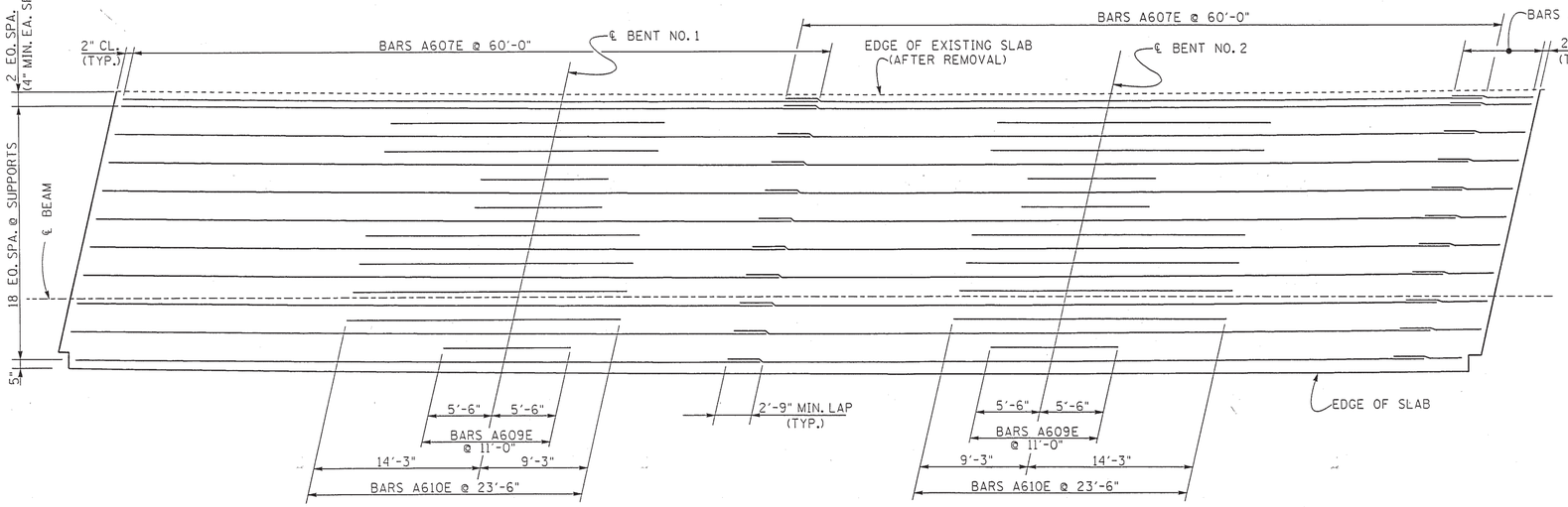
DEAD LOAD CORRECTION CURVE

⚠ NOTE: CONTRACTOR TO SAW CUT TOP 1" OF SLAB BEFORE REMOVING SLAB. ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE TO PROVIDE A SPLICE WITH NEW STEEL. CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE EXISTING STEEL. THE CONTRACTOR IS NOT ALLOWED TO USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILARLY HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS.



REMOVAL SKETCH

LOOKING FORWARD ON SURVEY



PLAN OF MAIN REINFORCING

ESTIMATED QUANTITIES		
CONCRETE CLASS "D" (BRIDGE DECK) C.Y.	EPOXY COATED REINFORCING STEEL LB.	STEEL BAR REINFORCEMENT (BRIDGES) LB.
51	16,428	678

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
WIDENING OF INTERSTATE 40
OVER 40TH AVENUE
STATION 98+95.34
DAVIDSON COUNTY
1995

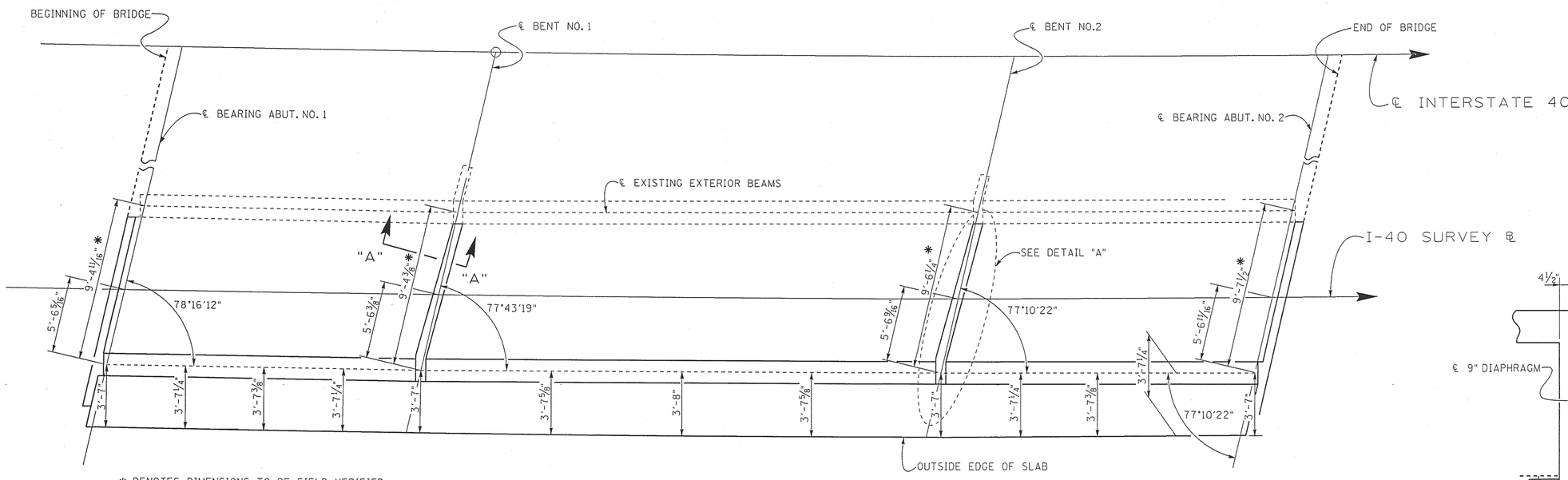
HARDIE M. BROOKS, JR. REGISTERED ENGINEER AGRICULTURAL & STRUCTURAL STATE OF TENNESSEE 15837

DESIGNED BY K. LITTON DATE 01-95
DRAWN BY M. CHILDRESS DATE 04-95
SUPERVISED BY R.L.H./J.H.P. DATE 04-95
CHECKED BY K. LITTON DATE 04-95

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-74

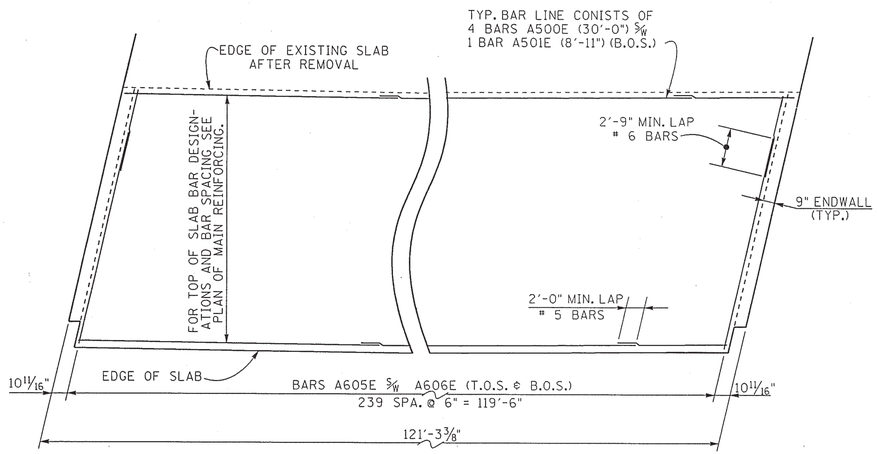
SUP002.DGN



* DENOTES: DIMENSIONS TO BE FIELD VERIFIED.

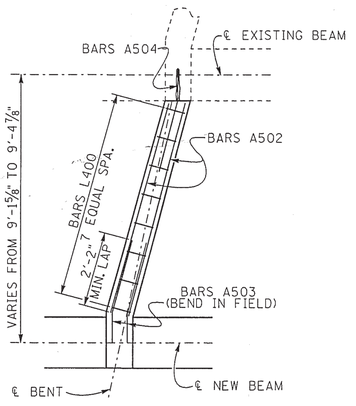
FRAMING PLAN

DETAIL "B"
@ EXISTING DIAPHRAGM

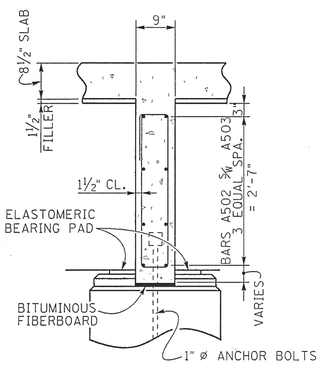


SLAB PLAN

T.O.S. DENOTES TOP OF SLAB
B.O.S. DENOTES BOTTOM OF SLAB



DETAIL "A"
(TYP.) @ BENTS



SECTION "A-A"

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS WIDENING OF INTERSTATE 40 OVER 40TH AVENUE STATION 98+95.34 DAVIDSON COUNTY 1995

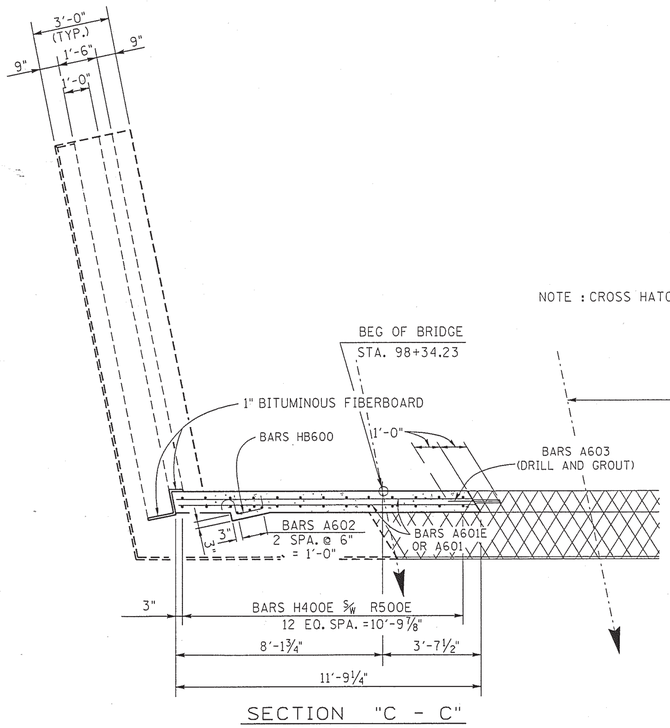
HARDIE M. BROOKS — REGISTERED ENGINEER — 383 — STATE OF TENNESSEE — 6/12/95

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY	K. LITTON	DATE 01-95
DRAWN BY	M.CHILDRESS	DATE 04-95
SUPERVISED BY	R.L.H.N.J.H.P.	DATE 04-95
CHECKED BY	K. LITTON	DATE 04-95

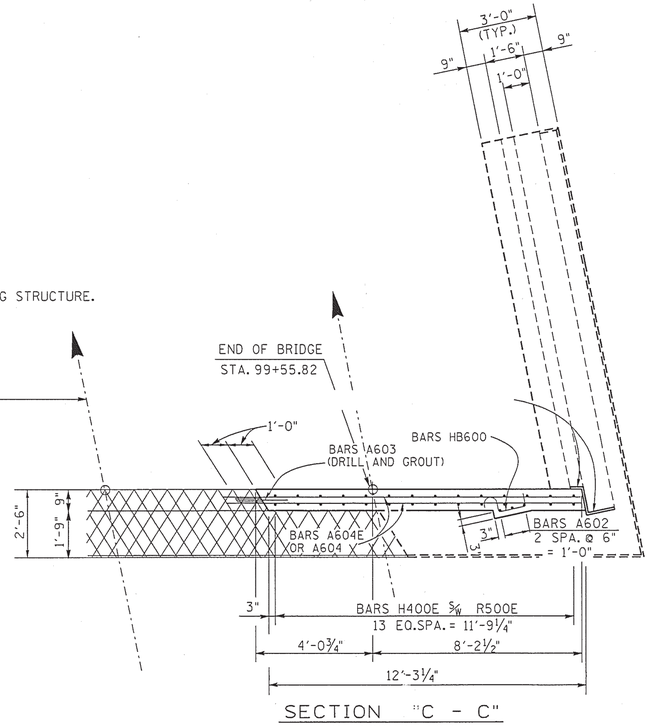
M-314-75

SUP004.DGN

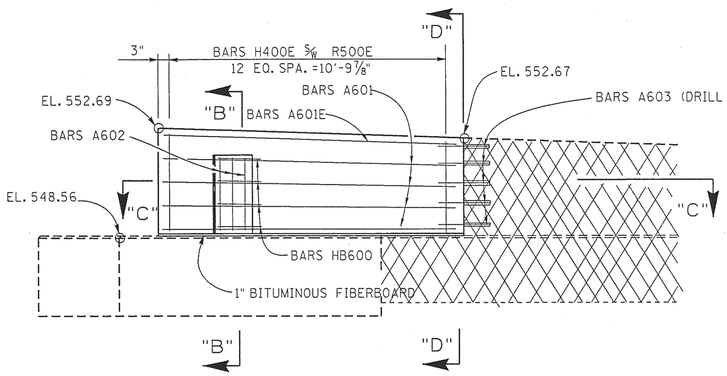


SECTION "C - C"
(AT ABUTMENT NO.1)

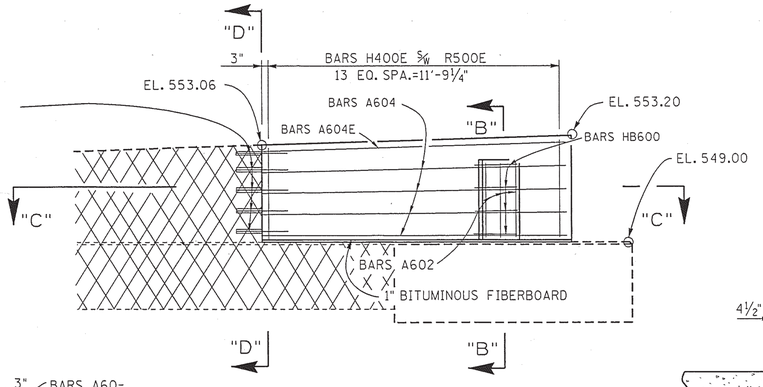
NOTE : CROSS HATCHED AREA INDICATES EXISTING STRUCTURE.



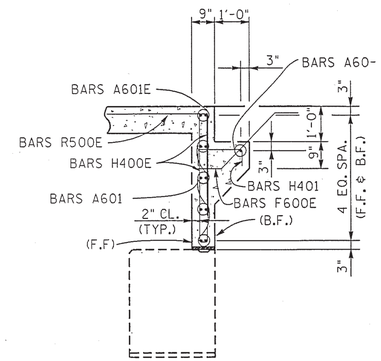
SECTION "C - C"
(AT ABUTMENT NO.2)



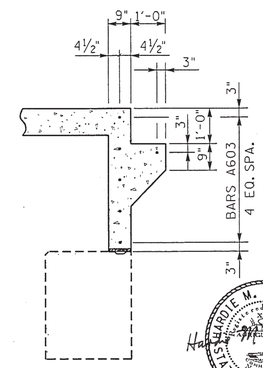
ELEVATION
LOOKING BACK ON SURVEY



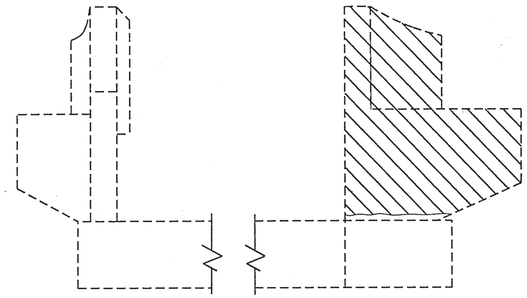
ELEVATION
LOOKING FORWARD ON SURVEY



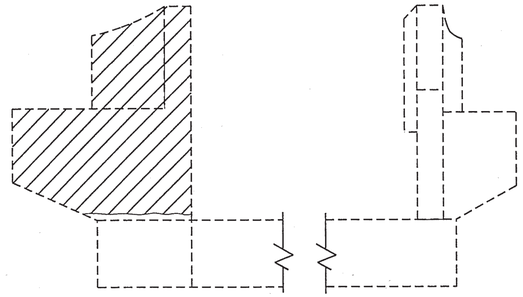
SECTION 'B'-'B'



SECTION 'D'-'D'
(BARS A604 DRILL AND GROUT)



REMOVAL SKETCH
(AT ABUTMENT NO.2)



REMOVAL SKETCH
(AT ABUTMENT NO.1)

NOTE: CROSS HATCHED AREA DENOTES EXISTING STRUCTURE

NOTE: DASHED LINES DENOTES EXISTING STRUCTURE

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS
WIDENING OF INTERSTATE 40
OVER 40TH AVENUE
STATION 98+95.34
LOG MILE 0.29
DAVIDSON COUNTY
1995

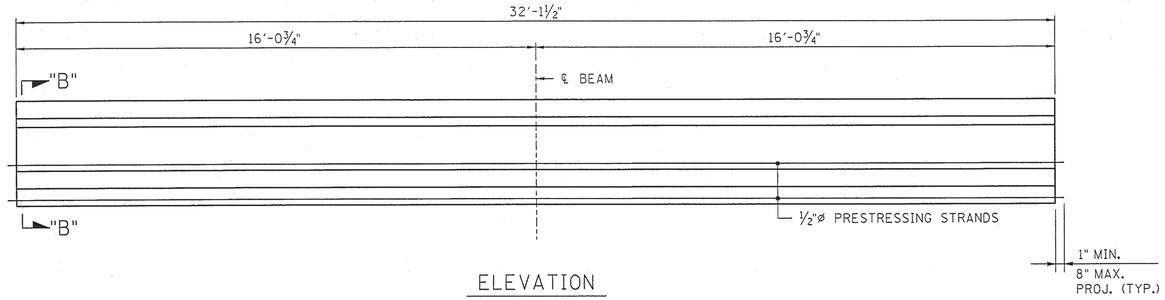


CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY KEN LITTON DATE 03-95
DRAWN BY FARRAR DATE 04-95
SUPERVISED BY R.L.H./J.H.F. DATE 04-95
CHECKED BY DATE 03-95

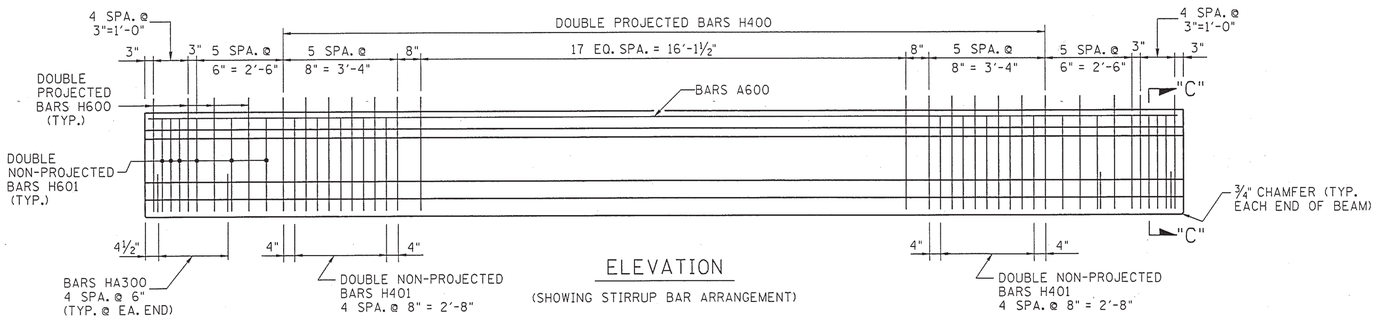
M-314-76

IBM003.DGN



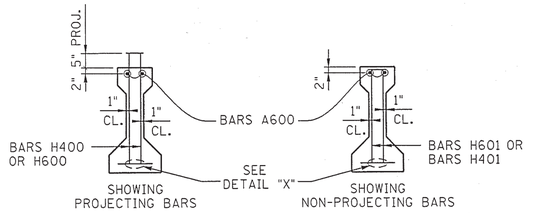
ELEVATION

(SHOWING PRESTRESSING STRANDS)

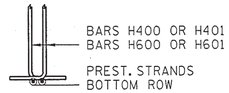


ELEVATION

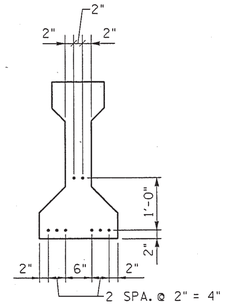
(SHOWING STIRRUP BAR ARRANGEMENT)



SECTION "C-C"

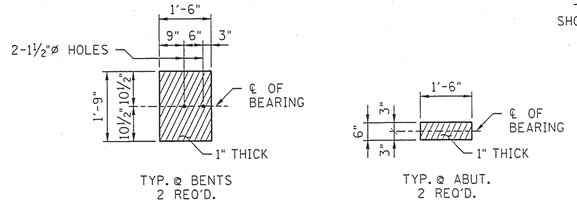


DETAIL "X"



SECTION "B-B"

SHOWING PRESTRESSING STRANDS



ELASTOMERIC BEARING PAD DETAILS

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTES:

1) ALL BEAMS ARE AASHTO - PCI STANDARD TYPE II.

2) ELASTOMERIC BEARING PADS TO BE 1" × 6" × 1'-6" AT THE ABUTMENTS AND 1" × 1'-9" × 1'-6" WITH 1½" ø HOLES AT THE BENTS.

3) THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 5,000 PSI AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 4,000 PSI. SEE GENERAL NOTES FOR CONCRETE FINISHING NOTE.

4) SEE STD-14-2 FOR I-BEAM STANDARD DETAILS, NOTES AND REINFORCING.

BILL OF STEEL PER BEAM

BAR	SIZE	NO. REQ'D	LENGTH
A500	5	6	5'-6"
A600	6	2	31'-10"
C500	5	12	6'-9"
H400	4	60	4'-4"
H401	4	20	3'-8"
H600	6	16	4'-4"
H601	6	24	3'-8"
HA300	3	10	3'-5"

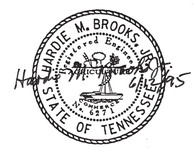
PRESTRESSED BEAM DESIGN DATA - PER BEAM

LIVE LOAD DISTRIBUTION FACTOR: 1.3838 WHEELS
COMPOSITE DEAD LOAD: 388 LB/FT
COMPOSITE DESIGN SLAB (f'c = 3000 PSI).

NOTE: DOWNWARD DEFLECTION UNDER TOTAL DL IS NOT ALLOWED.

ESTIMATED QUANTITIES - PER BEAM

NO. BEAMS REQ'D	PRESTRESSING STRANDS (LOW RELAXATION) LB.	CLASS "A" CONCRETE C.Y.	REINFORCING STEEL LB.
2	141	3	686



DESIGNED BY KEN LITTON DATE 1-95
DRAWN BY M. DYE DATE 4-95
SUPERVISED BY R.L.H. \ J.H.P. DATE 4-95
CHECKED BY KEN LITTON DATE 5-95

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
PRESTRESSED I-BEAM DETAILS
SPAN NO. 1 AND 3
WIDENING OF INTERSTATE 40
OVER
40TH AVENUE
STATION 98+95.34
DAVIDSON COUNTY
1995

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-77

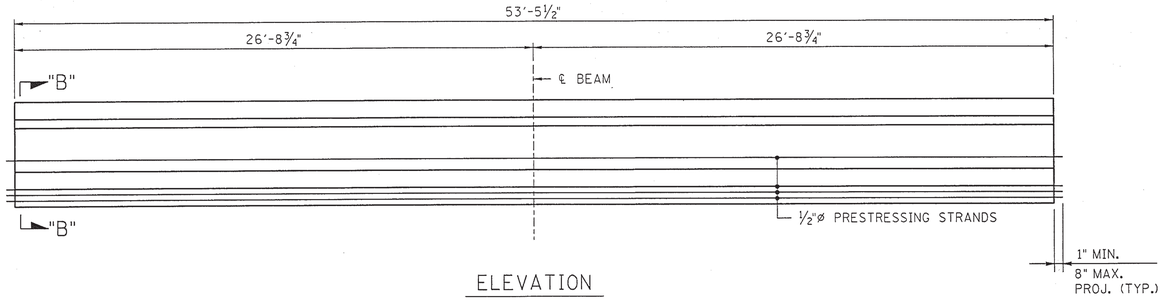
IBM003.DGN

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

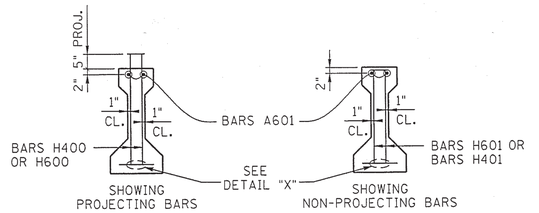
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

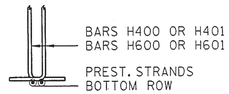


ELEVATION

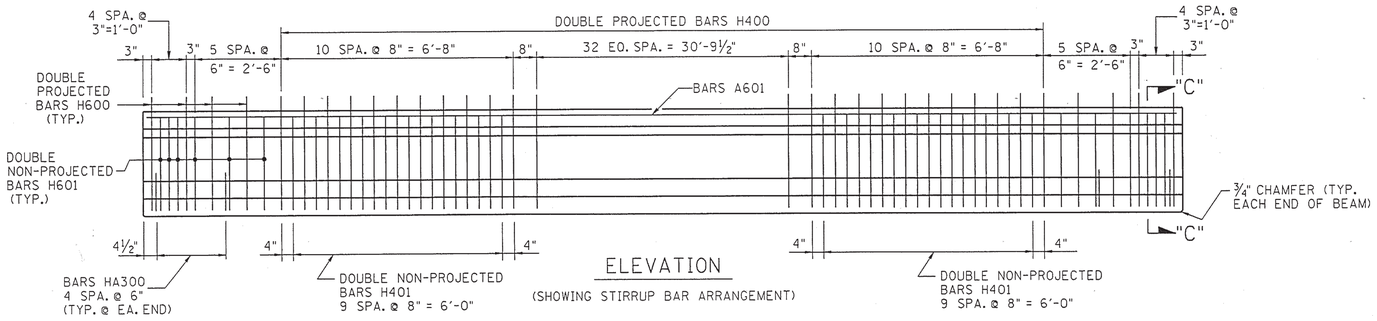
(SHOWING PRESTRESSING STRANDS)



SECTION "C-C"

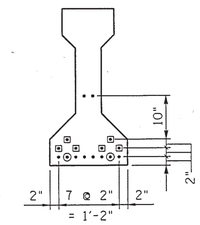


DETAIL "X"



ELEVATION

(SHOWING STIRRUP BAR ARRANGEMENT)



SECTION "B-B"

SHOWING PRESTRESSING STRANDS

⊙ DENOTES BREAK BOND 8'-0" FROM ENDS OF BEAM
⊡ DENOTES BREAK BOND 6'-0" FROM ENDS OF BEAM

NOTES:

1) ALL BEAMS ARE AASHTO - PCI STANDARD TYPE II.

2) ELASTOMERIC BEARING PADS TO BE 1" × 6" × 1'-6" AT THE ABUTMENTS AND 1" × 1'-9" × 1'-6" WITH 1½" ø HOLES AT THE BENTS.

3) THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 PSI AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 4,200 PSI. SEE GENERAL NOTES FOR CONCRETE FINISHING NOTE.

4) SEE STD-14-2 FOR I-BEAM STANDARD DETAILS, NOTES AND REINFORCING.

BILL OF STEEL PER BEAM

BAR	SIZE	NO. REQ'D	LENGTH
A500	5	6	5'-6"
A601	6	2	53'-2"
C500	5	12	6'-9"
H400	4	110	4'-4"
H401	4	40	3'-8"
H600	6	16	4'-4"
H601	6	24	3'-8"
HA300	3	10	3'-5"

PRESTRESSED BEAM DESIGN DATA - PER BEAM

LIVE LOAD DISTRIBUTION FACTOR: 1.3838 WHEELS
COMPOSITE DEAD LOAD: 388 LB/FT
COMPOSITE DESIGN SLAB (f'c = 3000 PSI).

NOTE: DOWNWARD DEFLECTION UNDER TOTAL DL IS NOT ALLOWED.

ESTIMATED QUANTITIES - PER BEAM

NO. BEAMS REQ'D	PRESTRESSING STRANDS (LOW RELAXATION) LB.	CLASS "A" CONCRETE C.Y.	REINFORCING STEEL LB.
1	460	5	944

HARDIE M. BROOKS, JR. Registered Engineer No. 6271 STATE OF TENNESSEE

Hardie M. Brooks Jr. 6/12/95

BRIDGE NO. 2

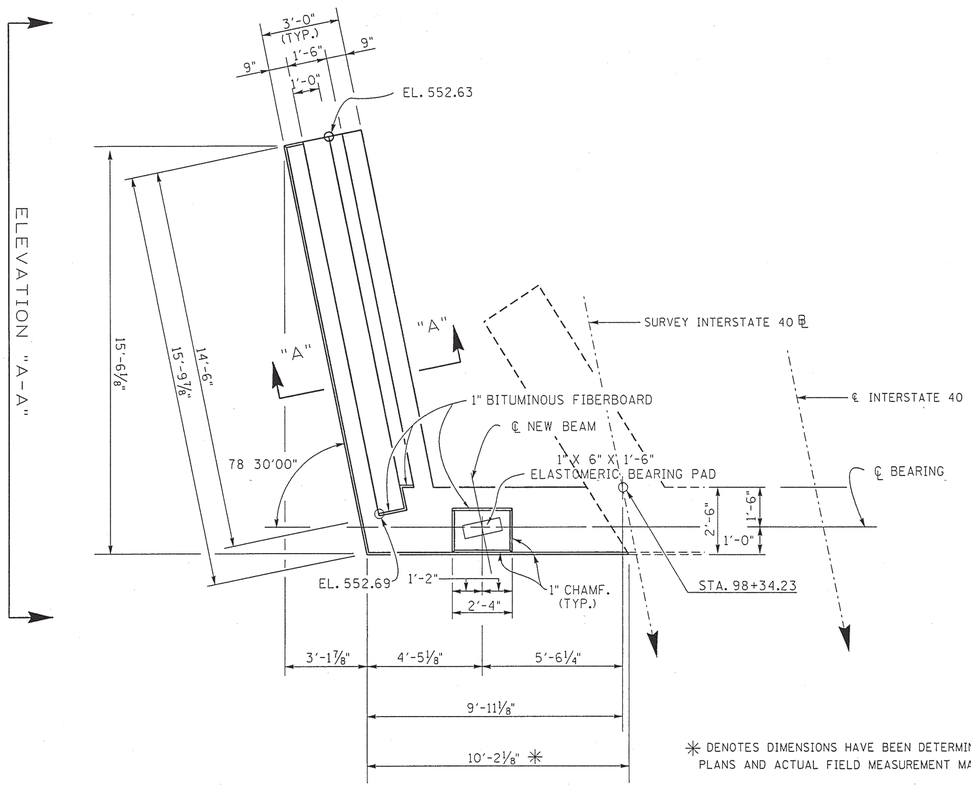
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
PRESTRESSED I-BEAM DETAILS
SPAN NO. 2
WIDENING OF INTERSTATE 40
OVER
40TH AVENUE
STATION 98+95.34
DAVIDSON COUNTY
1995

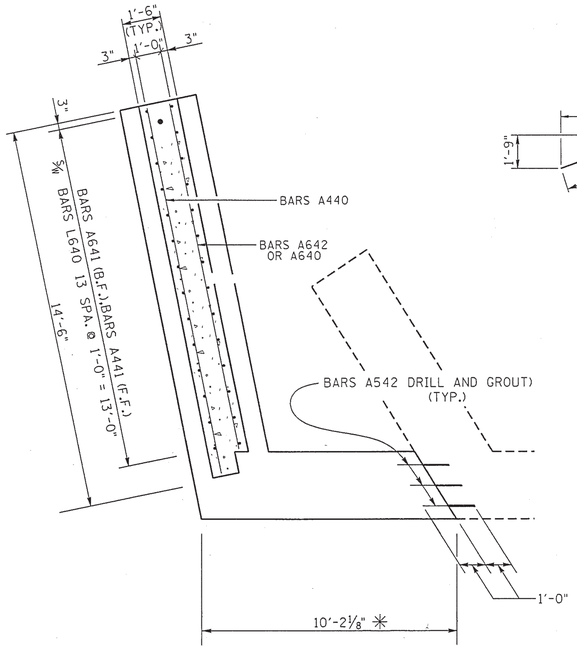
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-78

DESIGNED BY KEN LITTON DATE 1-95
DRAWN BY M. DYE DATE 4-95
SUPERVISED BY R.L.H. \ J.H.P. DATE 4-95
CHECKED BY KEN LITTON DATE 5-95

ABT004.DGN





SECTION 'C'-'C'

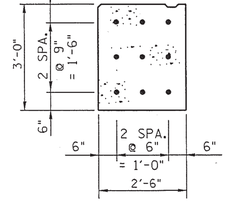
✳ DENOTES DIMENSIONS HAVE BEEN DETERMINED FROM EXISTING BRIDGE PLANS AND ACTUAL FIELD MEASUREMENT MAY VARY.

PLAN

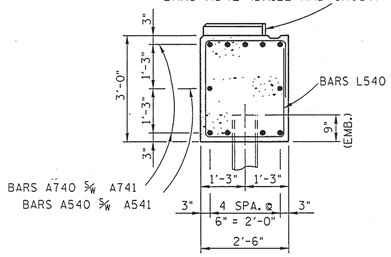
NOTE: DASHED LINES INDICATE EXISTING STRUCTURE.

NOTE: THE BACKWALL SHALL NOT BE POURED UNTIL THE GIRDERS ARE IN PLACE. THE TOP 12" OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.

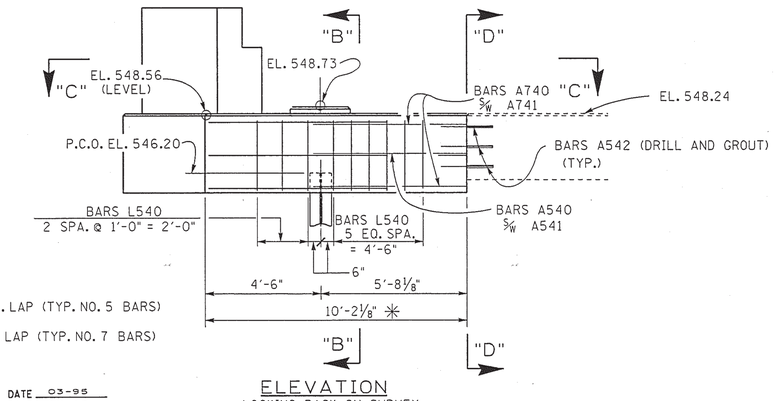
NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY PLACING SUPERSTRUCTURE FORMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.



SECTION 'D'-'D'



SECTION 'B'-'B'



ELEVATION
LOOKING BACK ON SURVEY

⊗ DENOTES 2'-2" MIN . LAP (TYP. NO. 5 BARS)

◕ DENOTES 3'-9" MIN . LAP (TYP. NO. 7 BARS)

NOTES:

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

NOTE: COST OF BRIDGERAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR BRIDGERAIL SYSTEM.

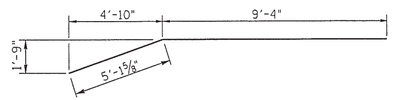
NOTE: VERTICAL REINFORCEMENT IN THE ENDPOST TO BE PLACED BEFORE POURING CONCRETE IN WING SHOWN ON THIS SHEET. SEE ELEVATION VIEW "A-A".

DESIGNED BY KEN LITTON DATE 03-95
DRAWN BY FARRAR DATE 04-95
SUPERVISED BY R.L.H./J.H.P. DATE 04-95
CHECKED BY DATE 03-95

(BRIDGERAIL, ENDPOST EACH)

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) C.Y.	STEEL BAR REINFORCEMENT (BRIDGES) LB.
2.031	766



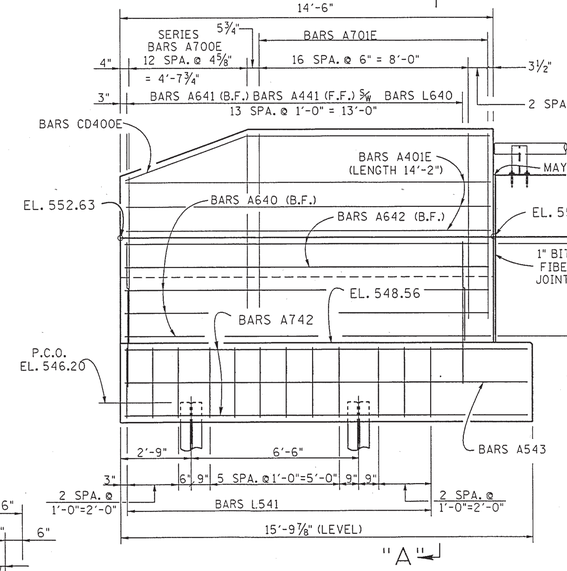
BARS CD400E

CONST. NO. 19005-3130-44

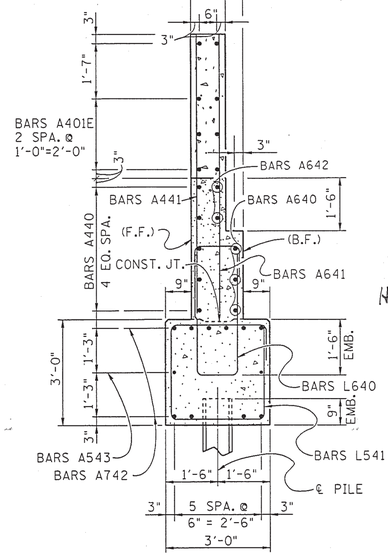
PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION "A-A"



SECTION 'A'-'A'

DENOTES: (F.F.) = FRONT FACE
DENOTES: (B.F.)= BACK FACE

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) C.Y.	STEEL BAR REINFORCEMENT (BRIDGES) LB.
11	1,398

HAROLD E. N. BROOKS — REGISTERED ENGINEER — STATE OF TENNESSEE — 6-15-95

BRIDGE NO. 2

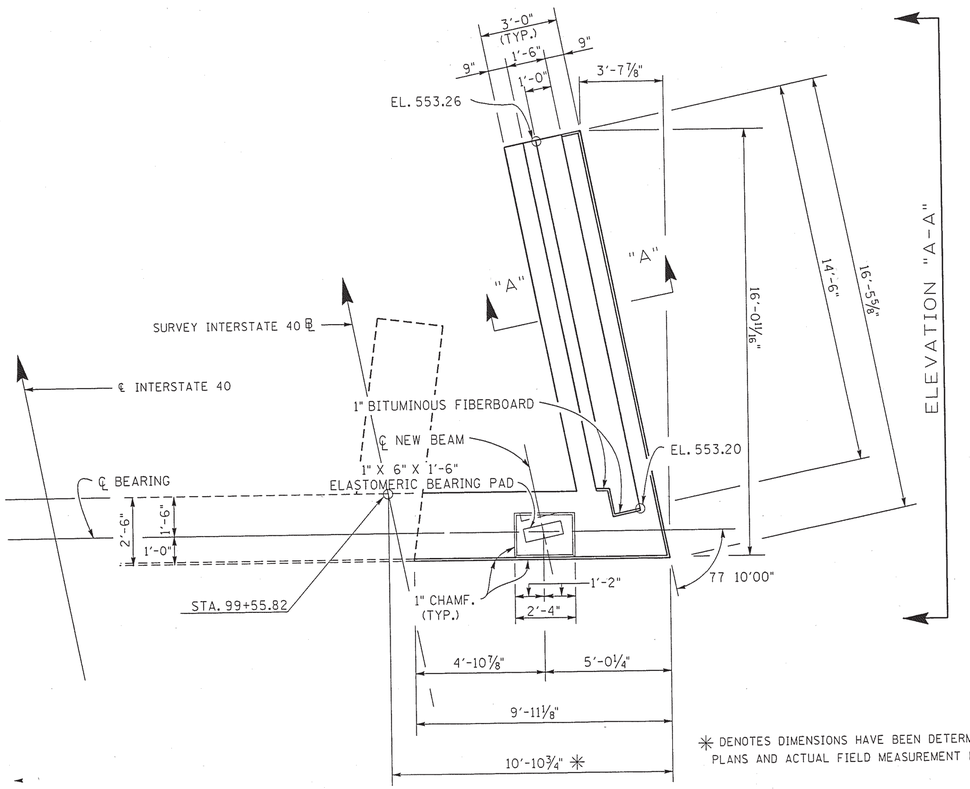
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT NO. 1
WIDENING OF INTERSTATE 40
OVER 40TH AVENUE
STATION 98+95.34
LOG MILE 0.29
DAVIDSON COUNTY
1995

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-79

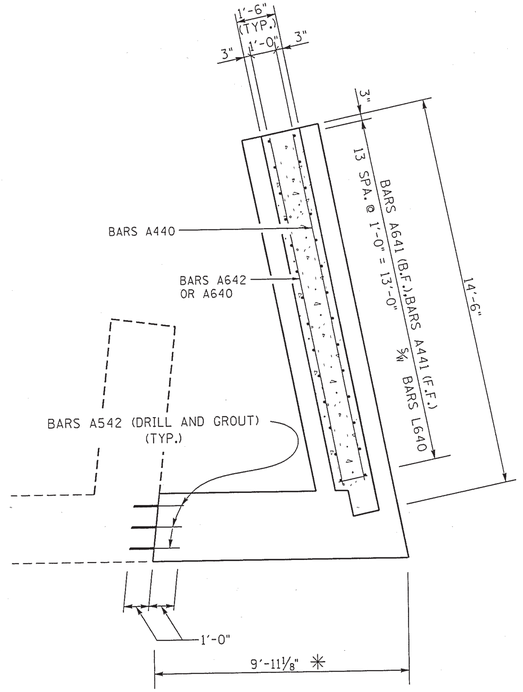
ABT004.DGN



✳ DENOTES DIMENSIONS HAVE BEEN DETERMINED FROM EXISTING BRIDGE PLANS AND ACTUAL FIELD MEASUREMENT MAY VARY.

NOTE: DASHED LINES INDICATE EXISTING STRUCTURE.

PLAN

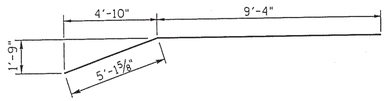


SECTION 'C'-'C'

(BRIDGERAIL, ENDPOST EACH)

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) C.Y.	STEEL BAR REINFORCEMENT (BRIDGES) LB.
2,031	766



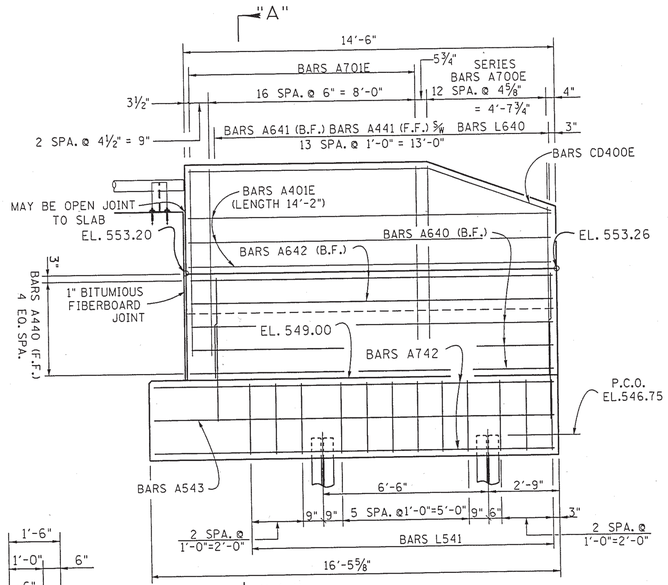
BARS CD400E

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION "A-A"

DENOTES: (F.F.) = FRONT FACE
DENOTES: (B.F.)= BACK FACE

NOTES:

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

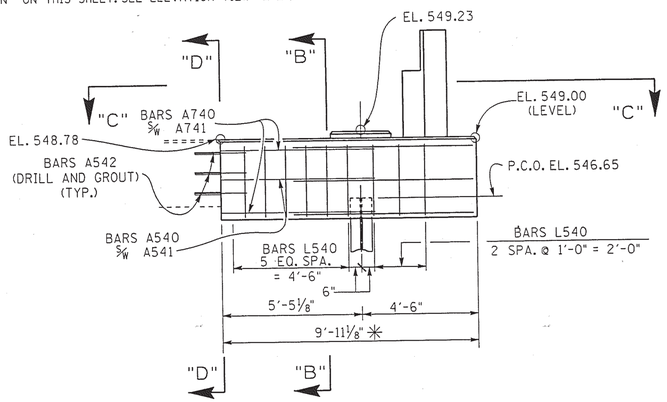
RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

NOTE: COST OF BRIDGERAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR BRIDGERAIL SYSTEM.

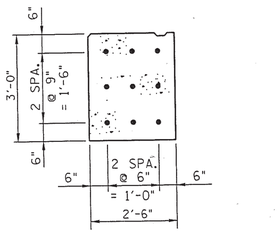
NOTE: VERTICAL REINFORCEMENT IN THE ENDPOST TO BE PLACED BEFORE POURING CONCRETE IN WING SHOWN ON THIS SHEET. SEE ELEVATION VIEW "A-A".

NOTE: THE BACKWALL SHALL NOT BE POURED UNTIL THE GIRDERS ARE IN PLACE. THE TOP 12" OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.

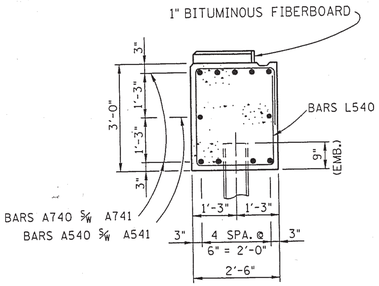
NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY PLACING SUPERSTRUCTURE FORMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.



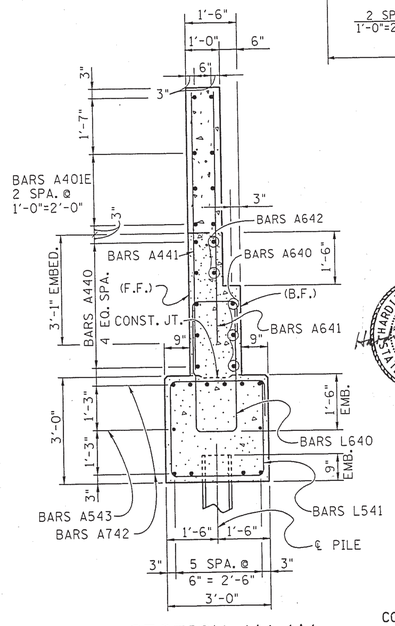
ELEVATION
LOOKING FORWARD ON SURVEY



SECTION 'D'-'D'
BARS A542 (DRILL AND GROUT)



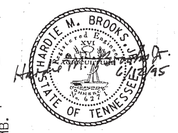
SECTION 'B'-'B'



SECTION 'A'-'A'

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) C.Y.	STEEL BAR REINFORCEMENT (BRIDGES) LB.
11	1,398



BRIDGE NO. 2
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT NO. 2
WIDENING OF INTERSTATE 40
OVER 40TH AVENUE
STATION 98+95.34
LOG MILE 0.29
DAVIDSON COUNTY
1995

⊗ DENOTES 2'-2" MIN . LAP (TYP. NO. 5 BARS)

◕ DENOTES 3'-9" MIN . LAP (TYP. NO. 7 BARS)

DESIGNED BY	KEN LITTON	DATE	03-95
DRAWN BY	FARRAR	DATE	04-95
SUPERVISED BY	R.L.H./J.H.P.	DATE	04-95
CHECKED BY		DATE	04-95

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

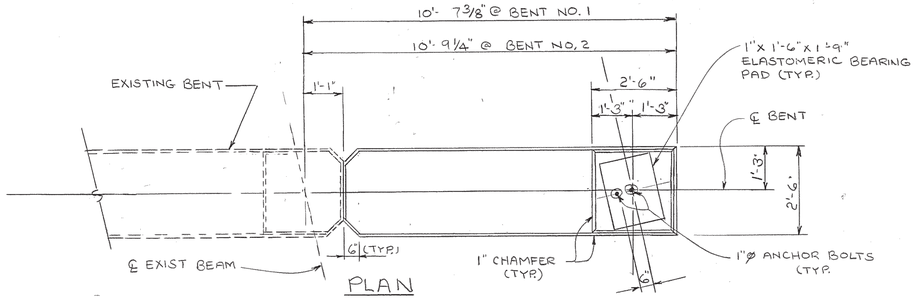
M-314-80

CONST 19005-3130-44

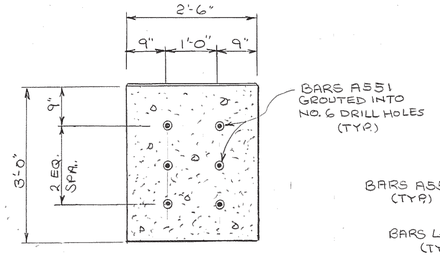
PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

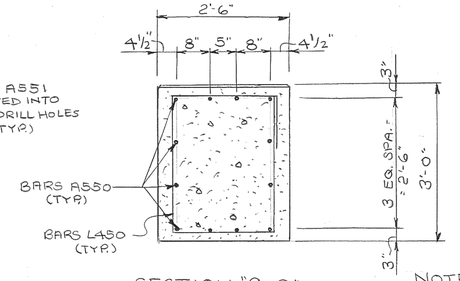


PLAN



SECTION "B-B"

(EMBED STEEL ONLY)

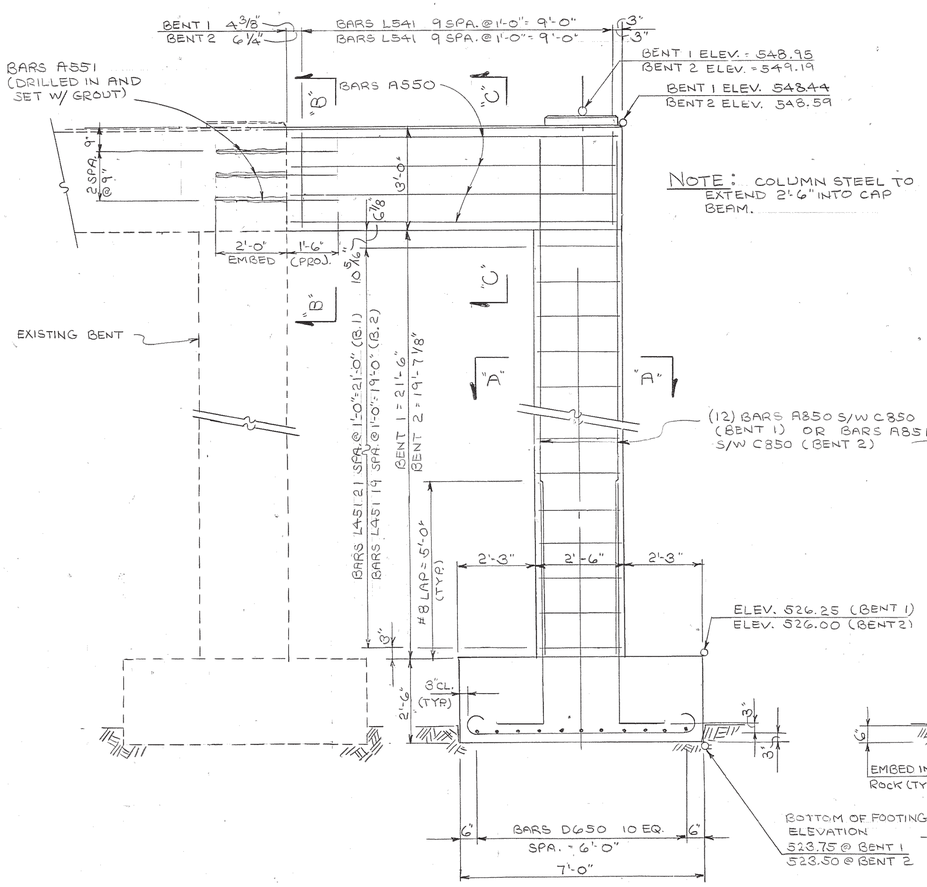


SECTION "C-C"

NOTE: WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING STD-6-1. BOLT PROJECTION 11".

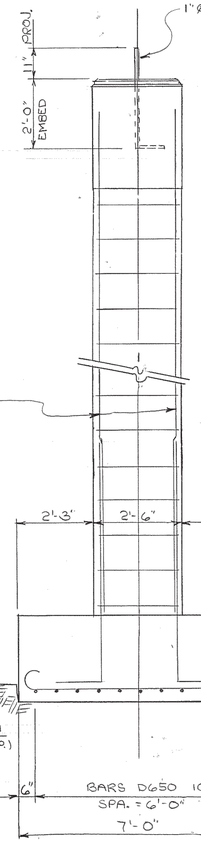
NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

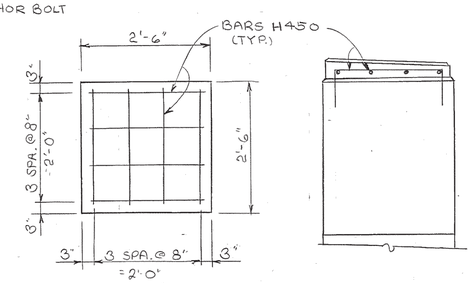


ELEVATION

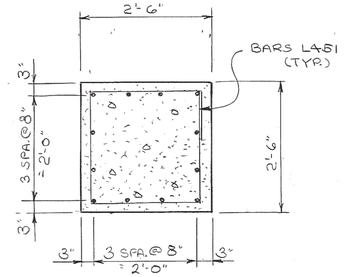
NOTE: COLUMN STEEL TO EXTEND 2'-6" INTO CAP BEAM.



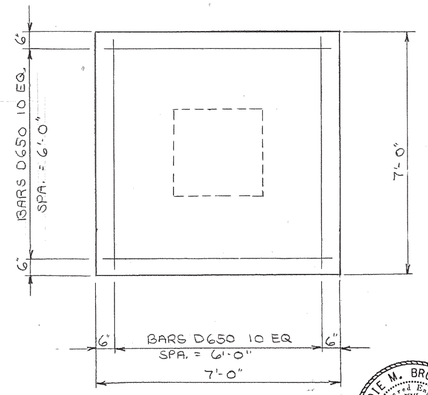
END ELEVATION



RISER BLOCK REINFORCEMENT DETAIL



SECTION "A-A"



PLAN OF FOOTING

ESTIMATED QUANTITIES

ITEM	CONCRETE CLASS "A" (C.Y.)	REINFORCING STEEL (LBS)
BENT NO. 1	12	1,562
BENT NO. 2	12	1,578

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENTS NO. 1 AND 2
WIDENING
INTERSTATE HIGHWAY 40 OVER
40TH AVENUE
STATION 98+95.34
DAVIDSON COUNTY
1995

HAROLD M. BROOKS, JR. 6/12/95
STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY	KEN LITTON	DATE	1/95
DRAWN BY	M. R. MANNCHEN	DATE	4/95
SUPERVISED BY	RLH	DATE	4/95
CHECKED BY		DATE	

313213

M-314-81

FFD004.DGN

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

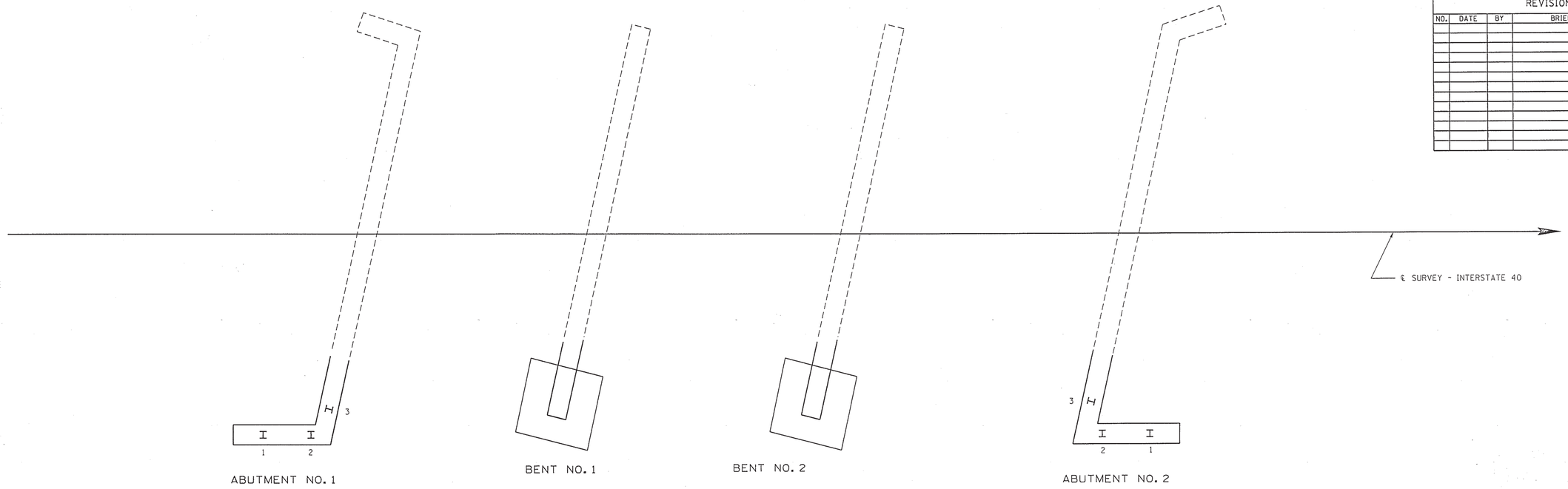
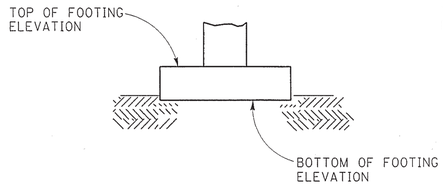
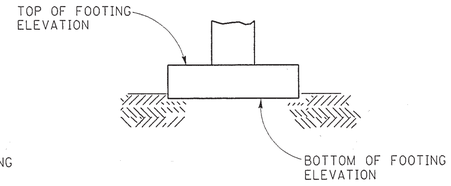


TABLE OF PILE DATA AT ABUTMENTS

		1	2	3
ABUTMENT NO. 1	PILE CUT-OFF ELEVATION			
	PILE TIP ELEVATION			
	IN PLACE PILE LENGTH			
ABUTMENT NO. 2	PILE CUT-OFF ELEVATION			
	PILE TIP ELEVATION			
	IN PLACE PILE LENGTH			



—BENT NO. 1—
(RIGHT OF ℄ SURVEY)



—BENT NO. 2—
(RIGHT OF ℄ SURVEY)

NOTE TO CONTRACTOR AND CONSTRUCTION OFFICE:
THE BLANKS ON THIS SHEET ARE TO BE FILLED IN BY THE CONSTRCTION OFFICE AND/OR FIELD ENGINEER GIVING AS BUILT CONDITIONS. AFTER COMPLETION IT IS TO BE SENT TO THE DIVISION OF STRUCTURES TO BECOME PART OF FINAL BRIDGE DOCUMENTS.

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FINAL FOUNDATION DATA
WIDENING OF INTERSTATE 40
OVER 40TH AVENUE
STATION 98+95.34
DAVIDSON COUNTY
1995

DESIGNED BY KEN LITTON DATE
DRAWN BY FARRAR DATE 4-95
SUPERVISED BY R.L.H. / J.H.P. DATE 4-95
CHECKED BY KEN LITTON DATE 5-95

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-82

30S007.DGN

BILL OF STEEL

SUPERSTRUCTURE

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A502	DIAPHRAGM	5	16					7'-6"
A503	DIAPHRAGM	5	16					3'-8"
A504	DIAPHRAGM	5	8					3'-11
A601	ENDWALL	6	8					11'-5"
A602	FILLET	6	6					3'-0"
A603	ENDWALL	6	12					2'-0"
A604	ENDWALL	6	8					11'-11"
HB600	FILLET	6	8	1'-2"	9"	11"		3'-1"
L400	DIAPHRAGM	4	16	6"	1'-0"	2'-8"		7'-4"

SUPERSTRUCTURE-EPOXY COATED

A500E	SLAB	5	56					30'-0"
A501E	SLAB	5	14					8'-11"
A601E	ENDWALL	6	2					11'-5"
A604E	ENDWALL	6	2					11'-11"
A605E	SLAB	6	480					10'-0"
A606E	SLAB	6	480					6'-2"
A607E	SLAB	6	22					60'-0"
A608E	SLAB	6	11					6'-5"
A609E	SLAB	6	6					11'-0"
A610E	SLAB	6	10					23'-6"
H400E	ENDWALL	4	27	5"	4'-5"			9'-3"
R500E	ENDWALL	5	27	2'-0"	2'-0"			4'-0"

ABUTMENT NO. 1 AND 2 (EACH)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A440	WINGWALL	4	5					14'-1"
A441	WINGWALL	4	14					3'-10"
A540	ABUTMENT BEAM	5	2					6'-0"
A541	ABUTMENT BEAM	5	2					7'-0"
A542	ABUTMENT BEAM	5	9					2'-0"
A543	WING BEAM	5	2					15'-6"
A640	WINGWALL	6	3					13'-3"
A641	WINGWALL	6	14					3'-9"
A642	WINGWALL	6	2					14'-1"
A740	WING BEAM	7	9					7'-0"
A741	WING BEAM	7	9					8'-0"
A742	WING BEAM	7	10					15'-6"
L540	ABUTMENT BEAM	5	9	2'-2"	1'-0"	2'-8"		10'-8"
L541	WING BEAM	5	12	2'-8"	1'-0"	2'-8"		11'-8"
L640	WING BEAM	6	14	1'-2"	1'-0"	3'-6"		10'-4"

BENT NO. 1

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A550	CAP	5	12					9'-2"
A551	CAP	5	6					3'-6"
A850	COLUMN/CAP	8	12					21'-8"
C850	COLUMN/FOOTING	8	12	7'-2"				8'-6"
D650	FOOTING	6	22	6'-6"				7'-10"
L450	CAP	4	10	2'-2"	1'-0"	2'-8"		10'-8"
L451	COLUMN	4	22	2'-2"	1'-0"	2'-2"		9'-8"

BENT NO. 2

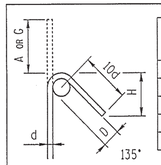
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A550	CAP	5	12					9'-2"
A551	CAP	5	6					3'-6"
A851	COLUMN/CAP	8	12					22'-2"
C850	COLUMN/FOOTING	8	12	7'-2"				8'-6"
D650	FOOTING	6	22	6'-6"				7'-10"
L450	CAP	4	10	2'-2"	1'-0"	2'-8"		10'-8"
L451	COLUMN	4	20	2'-2"	1'-0"	2'-2"		9'-8"

CONST. NO. 19005-3130-44

PROJECT NO.	YEAR	SHEET NO.
IM-40-4(65)205	1995	

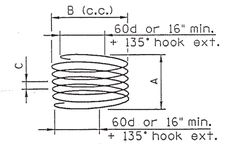
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



BAR SIZE	D (IN.)	135° HOOK HOOK A OR G	135° HOOK H APPROX.
#4	2	6½	4½
#5	2½	8	5½
#6	4½	10¼	6½
#7	5¼	1-0¼	7¼
#8	6	1-2¼	9

135° SEISMIC STIRRUP/TIE HOOK DIMENSIONS (ALL GRADES)



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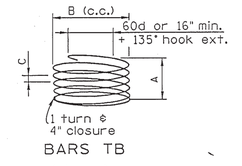

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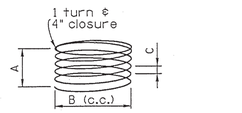
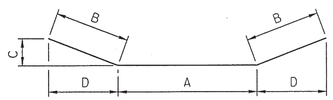


BARS CF



BARS A



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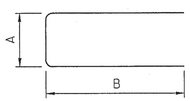

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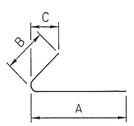

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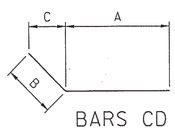

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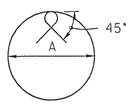

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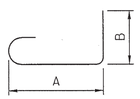

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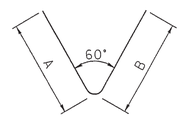

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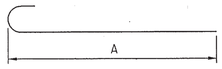

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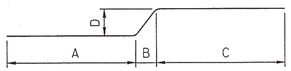

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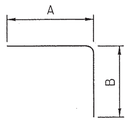

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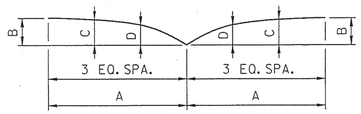
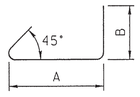
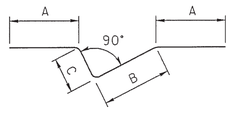


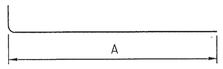
BARS V



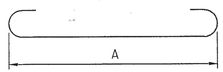
BARS YB



BARS JX



BARS C



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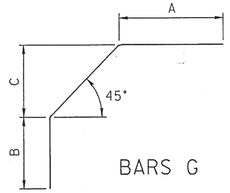

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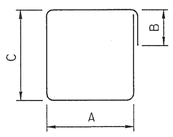

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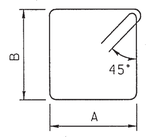
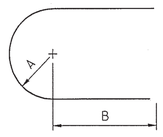
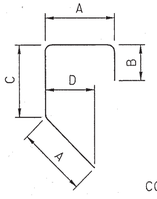


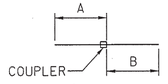
BARS LS



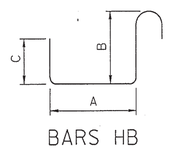
BARS XA



BARS J



BARS CU



BARS HB



REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

NOTE: DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOTE: THE SUFFIX E FOR BARS SO MARKED DENOTES EPOXY COATED REINFORCEMENT.

BRIDGE NO. 2

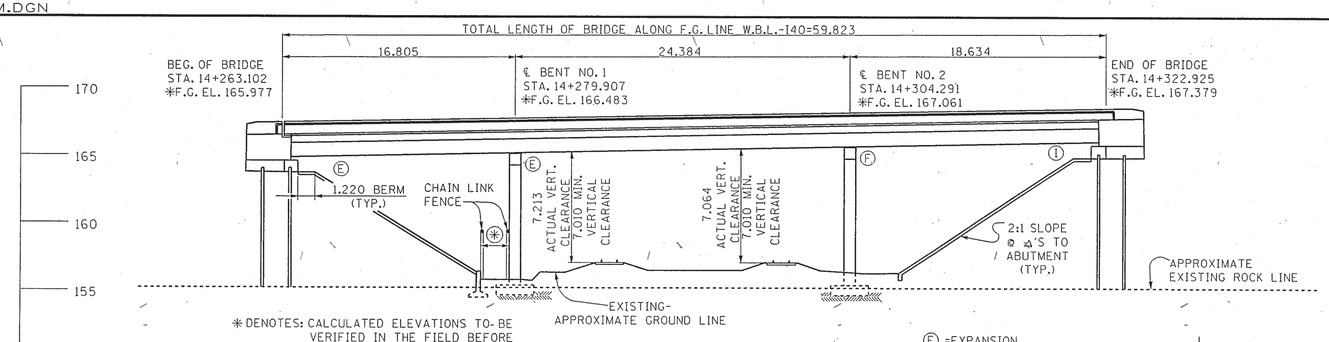
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BILL OF STEEL
WIDENING OF INTERSTATE 40
OVER 40TH AVENUE
STATION 98+95.34
DAVIDSON COUNTY
1995

DESIGNED BY BASMA FAKRI DATE 3-95
DRAWN BY J. PATTON DATE 4-95
SUPERVISED BY R.L.H. / J.H.P. DATE 4-95
CHECKED BY _____ DATE _____

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-314-83

LAY095M.DGN

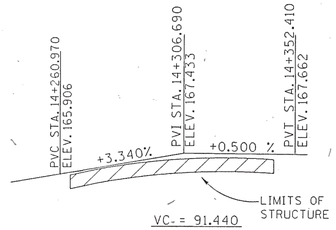


*DENOTES: CALCULATED ELEVATIONS TO-BE VERIFIED IN THE FIELD BEFORE CONSTRUCTION BEGINS. ALSO, ELEVATIONS ABOVE ARE ALONG FINISHED GRADE LINE.

⊛DENOTES: PEDESTRIAN TRAFFIC ON SIDEWALK IS TO BE CLOSED DURING CONSTRUCTION.

ELEVATION
SCALE 1:200

Ⓔ =EXPANSION
Ⓕ =FIXED
Ⓘ =INTEGRAL



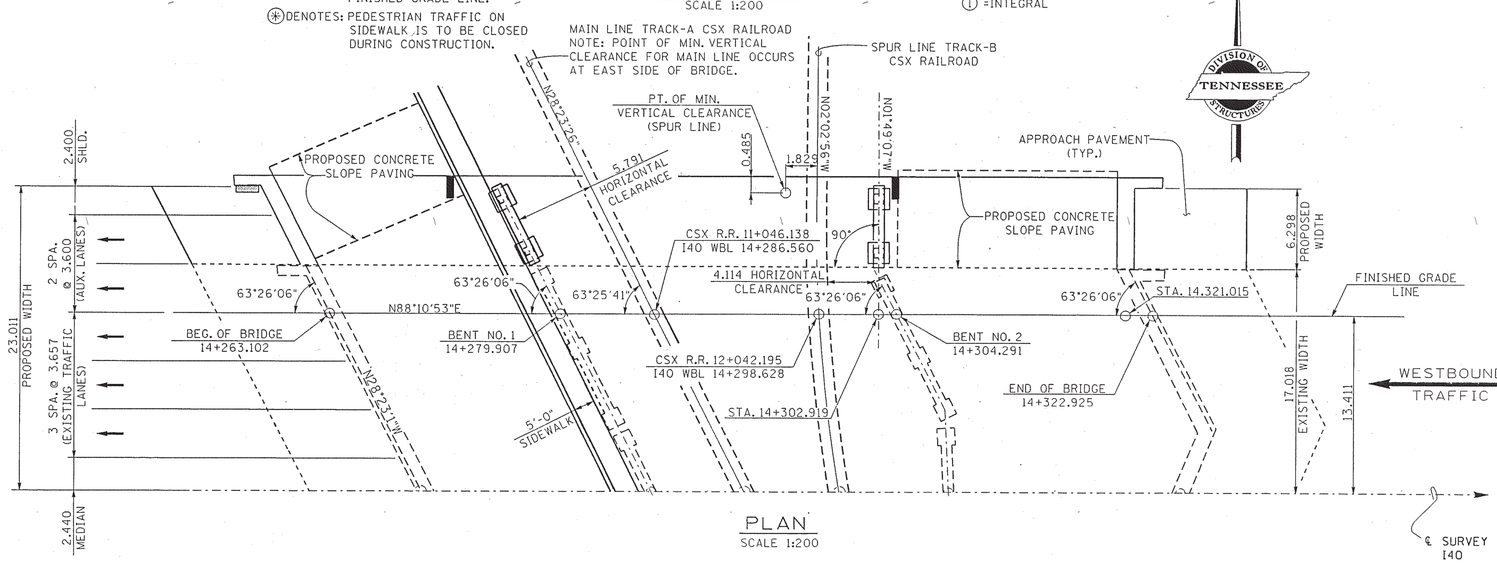
FINISHED GRADE SKETCH
(I40)

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



PLAN
SCALE 1:200

0.610m X 2.620m END OF BRIDGE DRAIN.

PARAPET DRAIN - STA. 14+272.500 AND STA. 14+305.000.(TYPE 1 GRATE DRAINS)

LIST OF EXISTING BRIDGE DRAWINGS

YEAR	DRAWING NO.
1995	M-314-66 THRU 70
1984	M-144-77 THRU 90
1967	K-66-12 THRU 18

LIST OF STANDARD DRAWINGS

	DWG. NO.	LATEST REV. DATE
BRIDGE RAILING CONCRETE PARAPET	STDM-1-1	4-28-97
SLIDER PLATES AND DECK DRAINS	STDM-1-2	6-10-96
PAVEMENT AT BRIDGE ENDS	STDM-1-5	4-28-97
BRIDGE END DRAIN WITH PAVEMENT AT BRIDGE ENDS	STDM-1-6#7	4-28-97
BRIDGE END DRAIN WITH PAVEMENT AT BRIDGE ENDS	STDM-1-8	6-10-96
STRIP SEAL EXPANSION JOINT	STDM-3-1	6-10-96
STRIP SEAL EXPANSION JOINT	STDM-3-2	6-10-96
STANDARD PRECAST, PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STDM-4-1	4-28-97
STANDARD PRECAST, PRESTRESSED BRIDGE DECK PANELS DESIGN CRITERIA	STDM-4-2	6-10-96
STANDARD PRECAST, PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STDM-4-3	6-10-96
STANDARD PRECAST, PRESTRESSED BRIDGE DECK PANELS CONSTRUCTION DETAILS	STDM-4-4	6-10-96
STANDARD PILE DETAILS	STDM-5-1	6-10-96
STANDARD PILE DETAILS	STDM-5-2	6-10-96
STANDARD REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLAB	STDM-9-1	6-10-96
MISC. ABUT. AND DRAINAGE DETAILS	STDM-10-1	6-10-96
STRIP SEAL EXPANSION REPAIR	SBRM-2-115	6-1-96
STRIP SEAL EXPANSION REPAIR	SBRM-2-116	6-1-96
STRIP SEAL EXPANSION REPAIR	SBRM-2-117	9-9-96
SLOPE PROTECTION	RDM-SA-1	5-27-96

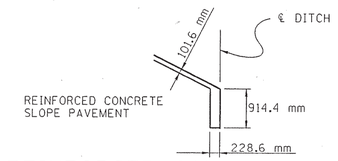
LIST OF SPECIAL PROVISIONS

	PROV. NO.	LATEST REV. DATE
APPROVAL OF SHOP DRAWINGS	105A	3-06-95
STEEL STRUCTURES	602	3-18-96
STRIP SEAL EXPANSION JOINTS	604S	5-01-95

DESIGNED BY JOE PRINCE DATE 9-97
DRAWN BY DEBRA LAMAY DATE 10-97
SUPERVISED BY JHP/RLH DATE 10-97
CHECKED BY _____ DATE _____

LIST OF DRAWINGS

	DWG. NO.	LATEST REV. DATE
LAYOUT OF BRIDGE	M-359-78	.....
GENERAL NOTES	M-359-79	.....
ESTIMATED QUANTITIES	M-359-79A	.....
FOUNDATION DATA	M-359-80	.....
SUPERSTRUCTURE	M-359-81	.....
SUPERSTRUCTURE DETAILS	M-359-82	.....
STRUCTURAL STEEL DETAILS	M-359-83	.....
STRUCTURAL STEEL DETAILS	M-359-84	.....
STRUCTURAL STEEL DETAILS	M-359-85	.....
BEARING DEVICE DETAILS	M-359-86	.....
ABUTMENT NO. 1	M-359-87	.....
ABUTMENT NO. 1 DETAILS	M-359-88	.....
ABUTMENT NO. 2	M-359-89	.....
ABUTMENT NO. 2 DETAILS	M-359-90	.....
BENT NO.1	M-359-91	.....
BENT NO.2	M-359-92	.....
APPROACH PAVEMENT DETAILS	M-359-93	.....
FINAL FOUNDATION DATA	M-359-94	.....
BILL OF STEEL	M-359-95	.....



*REINFORCED CONCRETE SLOPE PAVEMENT

PAVE SLOPES AND EXPOSED EARTH UNDER BRIDGES WITH 101.6 mm THICK CEMENT CONCRETE SLAB REINFORCED WITH 5.7 mm DIAMETER WIRE FABRIC @ 152.4 mm CENTERS AND 26.3 kg PER 9.29 square meters. THE WIRE FABRIC REINFORCEMENT SHALL BE PLACED AT ONE-HALF THE DEPTH OF THE SLAB AND EXTEND TO WITHIN 76.2 mm OF ITS EDGE WITH A 304.8 mm LAP REQUIRED ON ALL SHEETS. THE COST OF THE WIRE FABRIC REINFORCEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 709M-04. REINFORCED CONCRETE SLOPE PAVEMENT, 12.7 mm PREMOULDED EXPANSION JOINTS WITHOUT LOAD TRANSFERS SHALL BE FORMED ABOUT ALL STRUCTURES AND FEATURES PROJECTING THROUGH, IN OR AGAINST THE SLAB. THE SLAB SHALL BE GROOVED PARALLEL WITH, AND AT RIGHT ANGLES TO THE UNDERRAIL CENTER LINES (RESPECTIVE) AT 1.829 METERS CENTERS. DEPTH OF GROOVE TO BE NOT LESS THAN 25.4 mm. SEE STD. DWG. RDM-SA-1 FOR LIMITS OF SLOPE PROTECTION.

HAROLD M. BROOKS — REGISTERED ENGINEER — STATE OF TENNESSEE — 3/16/98

NOTE: ALL DIMENSIONS ARE SHOWN IN METERS UNLESS NOTED OTHERWISE.

2018 ADT = 173,200
ROADWAY VARIES FROM 42.213 m TO 42.969 m
℣ STDM-1-1 BRIDGERAIL ℄
CONCRETE MEDIAN BARRIER
DESIGN SPEED =100 km/h

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
LAYOUT OF BRIDGE NO. 1
WIDENING OF INTERSTATE I40 (WESTBOUND LANE) OVER C.S.X. RAILROAD
STATION 14+301.416
BRIDGE ID. NO. 19100400039
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-78

INTERCONNECTED PORTABLE BARRIER RAIL=78.212 lin. meters

GN094M.DGN

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (MARCH 1, 1995 EDITION).

LOADING: MS18-44 WITH ALTERNATE MILITARY.

DESIGN SPECIFICATIONS: AASHTO 1996 EDITION WITH ADDENDA INCLUDING THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES. (SEISMIC PERFORMANCE CATEGORY "A" WITH ACCELERATION COEEFFICIENT 0.075).

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

CONCRETE: TO BE CLASS "A" (CAST IN PLACE) f'c = 21 MPa EXCEPT AS NOTED OTHERWISE.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE "C" IN ARTICLE 604.23 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL. SEE STANDARD DRAWINGS STDM-4-1 THRU 4, AND ARTICLE 604.05 OF THE STANDARD SPECIFICATIONS.

BEARING DEVICES SHALL BE IN ACCORDANCE WITH THE DETAILS AND DIMENSIONS SHOWN ON DRAWING NO. M-359-86 .

REINFORCING STEEL: TO BE ASTM A615M GRADE 400 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

SPECIAL NOTE FOR RAILROAD CROSSING: THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE DONE IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE C.S.X. RAILROAD SO AS TO MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC.

SPECIAL NOTE - FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 2 METERS DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

PILES: TO BE HP250 × 62 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 490 KN FOR THE ABUTMENTS.

BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STDM-1-1.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED 12 mm IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR ROTATED, (NOT DRIVEN) TO ITS SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED 6mm IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A.

CONCRETE SEALER: CONCRETE SEALER SHALL BE APPLIED TO SUB-STRUCTURES COINCIDING WITH EXPANSION JOINT LOCATIONS BEFORE PLACEMENT OF BEARING DEVICES AND APPLYING TEXTURE COATING. (CONCRETE SEALER SHALL BE APPLIED TO THE FRONT VERTICAL FACE OF THE ABUTMENT BACKWALL AND THE FRONT AND TOP OF THE ABUTMENT BEAM.

STRUCTURAL STEEL: SEE NOTES ON DRAWING NO. M-359-81.

WELDING: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS AND NOTES ON DRAWING NO. M-359-81.

PAINT: INORGANIC ZINC WITH URETHANE FINISH BROWN TOP COAT CONFORMING TO FEDERAL STANDARD 595A, 20059.

RADIOGRAPHIC, ULTRASONIC AND MAGNETIC INSPECTION: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS AND NOTES ON DWG. NO. M-359-81.

STEEL STRUCTURES: SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602, NOTES ON DWG. NO. M-359-81 AND RAILROAD PROVISIONS.

VALUE ENGINEERING ALTERNATE BRIDGE DESIGN CRITERIA: ALTERNATE BRIDGE DESIGN PROPOSALS MAY NOT DIMINISH THE FUNCTIONAL OR STRUCTURAL EQUIVALENCY OF THE BRIDGE AND MUST MEET OR EXCEED BOTH THE SERVICE LEVEL AND ULTIMATE CAPACITIES OF THE CONTRACT PLANS STRUCTURE. ADDITIONALLY, FOR GRADE SEPARATIONS, THE HORIZONTAL CLEARANCES MAY NOT BE REDUCED, NOR MAY THE VERTICAL CLEARANCES BE LESS THAN THE MINIMUM ACCEPTABLE FOR THE TYPE OF FACILITY CROSSED.

NOTE: OUR MAINTENANCE RECORDS INDICATE THIS BRIDGE HAS BEEN STRIPPED OF ALL LEAD AND/OR CHROMATE BASED PAINTS AN RE-PAINTED WITH INORGANIC ZINC PRIMER AND A VINYL TOP COAT.

PAINTING STRUCTURAL STEEL: ALL SURFACES OF STRUCTURAL STEEL GIRDERS MUST BE PAINTED. HOWEVER, THE FAYING SURFACES OF FIELD SPLICES, THE TOP OF THE TOP FLANGE, SURFACES EMBEDDED IN CONCRETE AND BEARING AREAS SHALL RECEIVE ONLY 1 MIL THICKNESS OF SHOP COAT. BOLTED FAYING SURFACES FOR THIS PROJECT ARE DESIGNED FOR CLASS B SURFACE. (SEE AASHTO TABLE 10.32.3C). THE CONTRACTOR SHALL INSURE THE FAYING SURFACES ARE PREPARED TO PROVIDE A SLIP COEFFICIENT AT LEAST EQUAL TO THAT REQUIRED FOR THIS CLASS. THE FAYING SURFACES ARE TO PAINTED, AS NOTED ABOVE, AND THE CONTRACTOR SHALL SUPPLY A PAINT MANUFACTURER'S CERTIFICATION THAT THE PAINT TO BE USED WILL PROVIDE THE REQUIRED RESISTANCE AT THE REQUIRED THICKNESS WHEN TESTED IN ACCORDANCE WITH AASHTO 10.32.3.2.3.

DRILLED-IN-ANCHORS (MECHANICAL OR EPOXY):
CERTIFICATION: THE CONTRACTOR SHALL FURNISH ANCHOR PULL OUT DATA FROM AN INDEPENDENT TESTING LABORATORY USING CLASS "A" CONCRETE AS PRESCRIBED BT TENNESSEE HIGHWAY SPECIFICATIONS. THE ULTIMATE LOAD FOR 7/8" ø ANCHORS IS 19,000 LBS., 18,000 LBS. FOR 3/4" ø ANCHORS, 12,000 LBS. FOR 5/8" ø AND 9,000 LBS. FOR 1/2" ø. IN PLACE REQUIREMENTS: THE UNITS SHALL BE SUBSET 3/32" TO 1/4" AND TORQUED, WITH BASE PLATE IN PLACE, TO AN EQUIVALENT DIRECT PULL OUT LOAD OF 60 PERCENT OF REQUIRED ULTIMATE LOAD. THE DEPARTMENT WILL PERFORM TESTING OF ANCHORS ON SITE TO INSURE THE SPECIFIED IN PLACE REQUIREMENTS. INSTALLATIONS NOT MEETING THESE REQUIREMENTS MUST BE CORRECTED AT THE CONTRACTOR'S EXPENSE. FOR MECHANICAL ANCHORS, SLIPPAGE SHALL NOT EXCEED 1/4".

NOTE: THE CONTRACTOR SHALL SAW CUT 25 mm DEEP INTO THE SLAB BEFORE REMOVING CONCRETE. ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE AND BE SPLICED WITH THE NEW REINFORCING. THE CONTRACTOR SHALL NOT USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILAR HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM ALLOWABLE HAMMER SIZE IS THE 27 kg. CLASS.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. A CLASS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITEMS 604M04.01 AND 604M04.02.

NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDERS.

REQUIREMENTS AND RESTRICTIONS OF PHASE CONSTRUCTION:

1. THE LOCATION OF LONGITUDINAL CONSTRUCTION JOINTS SHALL NOT BE CHANGED TO ACCOMODATE REMAIN IN PLACE DECK FORMS
2. NO SHEET PILES OR BEARING PILES MAY BE DRIVEN FROM THE EXISTING OR PROPOSED STRUCTURE.
3. 3-3.657 TRAFFIC LANES SHALL BE MAINTAINED AT ALL TIMES.

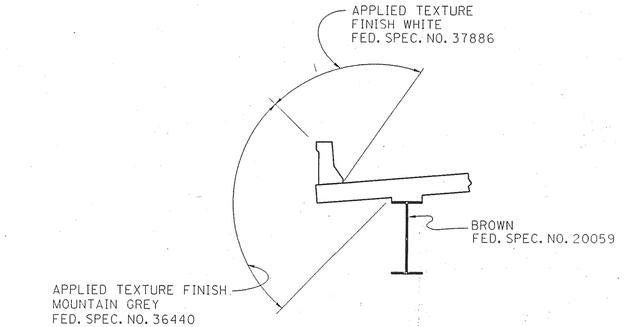
NOTE: THE FILLS AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-140-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



TYPICAL AT
PROPOSED CANTILEVER

APPLIED TEXTURE FINISH SKETCH

NOTE: IN ADDITION TO THE SURFACES SHOWN IN THE APPLIED TEXTURE FINISH SKETCH ALL EXPOSED SURFACES OF THE PROPOSED WINGWALLS, ABUTMENT BEAMS, BENTS AND EXTERIOR PORTIONS OF ENDWALLS ARE TO RECEIVE AN APPLIED TEXTURE FINISH (MOUNTAIN GREY, FED. SPEC. NO. 36440). COST TO BE INCLUDED UNDER ITEM NO. 604M04.01, APPLIED TEXTURE FINISH, (NEW STRUCTURES). ALSO, ALL EXPOSED SURFACES OF THE EXISTING BENTS AND ABUTMENT BEAMS ARE TO RECEIVE AN APPLIED TEXTURE FINISH (MOUNTAIN GRAY, FED. SPEC. NO. 36440). COST TO BE INCLUDED UNDER ITEM NO. 604M04.02, APPLIED TEXTURE FINISH (EXISTING STRUCTURES).

DESIGNED BY JOE PRINCE DATE 09-97
DRAWN BY M.R. MANNCHEN DATE 01-98
SUPERVISED BY R.L.H. / J.H.P. DATE 01-98
CHECKED BY _____ DATE -98

DIVISION OF METRIC ACTIVITIES

HARDIE M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE 3/16/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES AND
WIDENING OF INTERSTATE-40
OVER
CSX RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

M-359-79

GN094M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-140-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1.	3-16-98	JHP	UNIT CHANGE IN NOTE (14).

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 1	BENT NO. 1	BENT NO. 2	ABUT. NO. 2
(8)	202M04.01	REMOVAL OF STRUCTURES (EXIST. BR.)	L.S.	1					
(2)	204M02.01	DRY EXCAVATION (BRIDGES)	M3	69		15	21	20	13
(2)	204M04.01	ROCK EXCAVATION (BRIDGES)	M3	21			7	14	
	204M05	ROCK DRILLING (BRIDGES	M	4			2	2	
(9)	303M01.20	GRANULAR BACKFILL (BRIDGES)	TONNE	10		5			5
(4)	602M03	STEEL STRUCTURES	L.S.	1					
(14)(10)	602M10.50	STRUCTURAL STEEL REPAIR	EA.	15					
	604M02.03	EPOXY COATED REINFORCING STEEL	KG	16928	15823	863			242
(13)	604M03.01	CLASS "A" CONCRETE (BRIDGES)	M3	74		14	23	24	13
	604M03.02	STEEL BAR REINFORCEMENT (BRIDGES)	KG	8126		465	3339	3321	1001
(1)	604M03.04	PAVEMENT AT BRIDGE ENDS	M2	90					
	604M03.09	CLASS "D" CONCRETE (BRIDGE DECK)	M3	97	97				
	604M04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	M2	336					
	604M04.02	APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	M2	660					
	604M05.31	BRIDGE DECK GROOVING (MECHANICAL)	M2	487					
(3)(12)	604M10.32	EXPANSION JOINT REPAIRS (TYPE A)	M	26					
(11)	604M10.50	BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB)	M2	20					
	606M02.03	STEEL PILES (250mm)	M	63		33			30
	620M03.10	CONCRETE PARAPET (STDM-1-1)	M	71		10			9
	709M04	REINFORCED CONCRETE SLOPE PAVEMENT	M3	23		4			4
(7)	710M09.01	150mm PERFORATED PIPE WITH VERTICAL DRAIN SYS.	M	19		3			
	710M09.02	150mm PIPE UNDERDRAIN	M	8			3		
	908M21.01	BEARINGS (ABUTMENT NO. 1)	EA.	3					
	908M21.02	BEARINGS (BENT NO. 1)	EA.	3					
(5)	920M02.29	DECK DRAINS (TYPE 1 GRATE)	EA.	2					

(1) NOTE: PRIOR TO CONSTRUCTION OF PAVEMENT AT BRIDGE ENDS, THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL.

(2) EXCAVATION BASED ON FINAL PROFILE AT THE ABUTMENTS AND AT EXISTING GROUND LINE AND ROCK LINE AT BENTS.

(3) PRICE BID FOR ROADWAY EXPANSION DEVICES TO INCLUDE THE COST OF 15 M2 OF CONCRETE SEAL REQUIRED. SEE GENERAL NOTES FOR DESCRIPTION OF CONCRETE SEAL.

(4) NOTE: LUMP SUM: TOTAL ESTIMATED WEIGHT OF 50059 kg. OF STRUCTURAL STEEL INCLUDES: GIRDERS, STIFFENERS, SHEAR CONNECTORS, BOLTS, DIAPHRAGMS AND BEARING PLATES AT BENT NO. 2 AND ABUTMENT NO. 2. ALSO SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.49 AND 602.50.

(5) NOTE: THE COST OF 2 BRIDGE DECK DRAINS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE DECK DRAINS. SEE STD. DWG. STDM-1-2 FOR DETAILS.

(6) NOTE: THE COST OF WATER STOPS, BITUMINOUS FIBERBOARD, AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS.

(7) NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.

(8) NOTE: THE COST OF REMOVING THE EXTERIOR PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT, AND THE BRIDGERAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202M04.01.

(9) NOTE: GRANULAR BACKFILL SHALL BE CLASS "A" GRADING 'D' MATERIAL. SEE STANDARD DRAWING STDM-10-1.

(10) COST OF CONTAINMENT AND DISPOSAL OF PAINT REMOVAL WASTE TO BE INCLUDED IN ITEM 602M10.50.

(11) THE COST OF ALL LABOR, MATERIALS, EQUIPMENT AND MISCELLANEOUS ITEMS REQUIRED FOR PARTIAL DEPTH SLAB REPAIR ARE TO BE INCLUDED IN THE COST OF ITEM NO. 604M10.50.

(12) THE EXPANSION JOINT AT ABUTMENT NO. 1 SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION 604S, AND STANDARD DRAWING STD-3-1 AND 2. THE TOTAL REQUIRED MOVEMENT IS 100 mm. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF STRUCTURES FOR APPROVAL.

(13) THE COST OF RUBBER BONDING CEMENT AND ELASTOMERIC BEARING PADS AT BENT NO. 2 AND ABUTMENT NO. 2 TO BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "A" CONCRETE.

NOTE: CONCRETE FOR DECK REPAIR SHALL BE HIGH EARLY STRENGTH CONCRETE. F'c = 24 MPa @ 28 DAY STRENGTH. TRAFFIC SHALL NOT BE PERMITTED ON ANY OF THE REPAIRED AREAS UNTIL TEST SPECIMENS ATTAIN A COMPRESSIVE STRENGTH OF 21 MPa MINIMUM AND THE CONCRETE HAS BEEN IN PLACE A MINIMUM OF (10) TEN DAYS.

DETAIL SHOWING PARTIAL DEPTH DECK REPAIR

REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF 20 mm BELOW THE TOP BAR OF THE TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE COMPLETELY CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE HEADQUARTERS, BRIDGE INSPECTION AND REPAIR OFFICE. DECK REPAIR WILL BE PAID FOR UNDER ITEM 604M10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB). POWER DRIVEN HAND TOOLS USED FOR REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL DEPTH REPAIRS ARE ARE SUBJECT TO THE FOLLOWING RESTRICTIONS: 1) PNEUMATIC HAMMERS HEAVIER THAN THE NOMINAL 27 kg CLASS SHALL NOT BE USED; 2) CHIPPING HAMMERS OF THE 7 kg CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.

NOTE: ITEM NO. 604M10.50 SHALL BE BID WITH THE CONTINGENCY THAT THIS ITEM MAY BE INCREASED, DECREASED OR ELIMINATED AS DIRECTED BY THE ENGINEER.

DEMOLITION: THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ANY PARTS OF THE STRUCTURE THAT ARE NOT TO BE REMOVED SPECIFICALLY. THE CONTRACTOR IS NOT ALLOWED TO USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILARLY HEAVY EQUIPMENT REMOVAL. SAWING OR CUTTING OF THE CONCRETE IS ACCEPTABLE SO LONG AS ANY SPECIFIED PROJECTION OF THE EXISTING REINFORCING STEEL IS MAINTAINED. ALL DEVICES PROPOSED FOR CONCRETE DEMOLITION SHALL MEET THE APPROVAL OF THE ENGINEER.

▲1 (14) CLEANING AND PAINTING OF BEARINGS: (EXISTING BRIDGE ONLY)
ALL STEEL BEARINGS SHALL BE CLEANED IN ACCORDANCE WITH TENNESSEE STANDARD SPECIFICATIONS SECTION 603.05(a). HAND OR POWER TOOL CLEANING SHALL REMOVE ALL RUST, SCALE, LOOSE PAINT AND DIRT. AFTER CLEANING THE BEARINGS SHALL BE PAINTED WITH AN APPROVED EPOXY MASTIC PAINT APPLIED AT A MINIMUM DRY FILM THICKNESS OF 100 um. THE COLOR OF THE EPOXY MASTIC SHALL BE ALUMINUM OR GREY. SEE THE TENNESSEE DEPARTMENT OF TRANSPORTATION'S QUALIFIED PRODUCTS LIST FOR ACCEPTABLE BRANDS OF EPOXY MASTIC. ALL PRODUCTS USED, INCLUDING THINNERS, MUST BE SUPPLIED BY THE SAME MANUFACTURER.

APPLICATION: THE COATING APPLICATOR SHALL FOLLOW THE MANUFACTURER'S PRINTED INSTRUCTIONS AND SHALL HAVE THESE INSTRUCTIONS ON SITE DURING THE COURSE OF THE WORK.
ALL LABOR, EQUIPMENT, ETC. REQUIRED TO CLEAN AND PAINT EXISTING BEARINGS ARE TO BE INCLUDED IN ITEM 602M10.50, STRUCTURAL STEEL REPAIR.

DESIGNED BY JOE PRINCE DATE 09-97
DRAWN BY M.R. MANNCHEN DATE 01-98
SUPERVISED BY RLH / JHP DATE 01-98
CHECKED BY ____ DATE -98

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ESTIMATED QUANTITIES
WIDENING OF INTERSTATE-40
OVER
CSX RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. P.E. — REGISTERED — No. 14371 — STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-79A

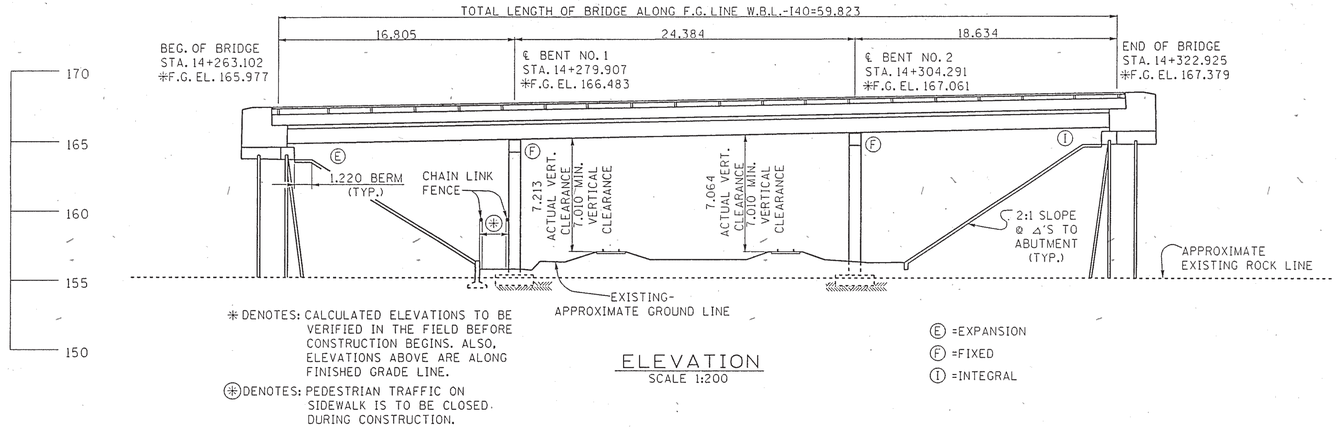
PRE031M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

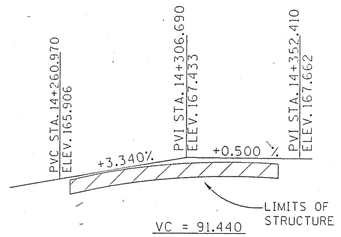


ELEVATION
SCALE 1:200

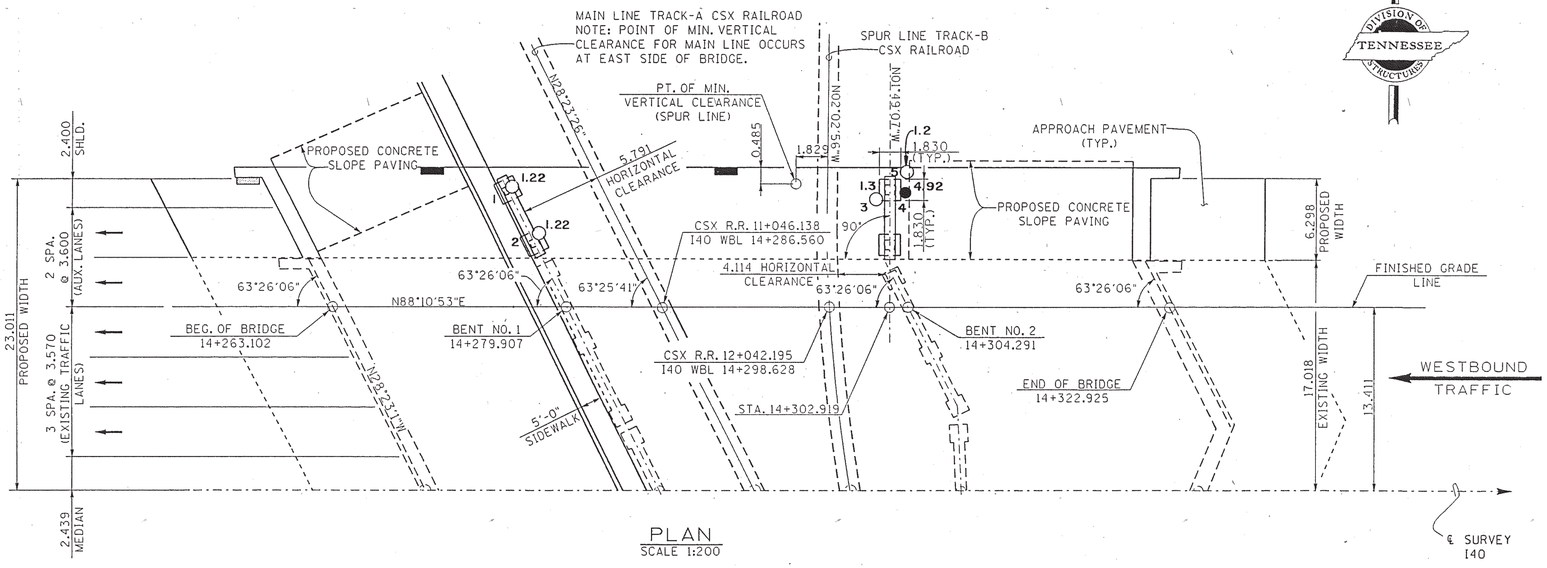
*DENOTES: CALCULATED ELEVATIONS TO BE VERIFIED IN THE FIELD BEFORE CONSTRUCTION BEGINS. ALSO, ELEVATIONS ABOVE ARE ALONG FINISHED GRADE LINE.

⊛DENOTES: PEDESTRIAN TRAFFIC ON SIDEWALK IS TO BE CLOSED DURING CONSTRUCTION.

Ⓔ =EXPANSION
Ⓕ =FIXED
Ⓘ =INTEGRAL



FINISHED GRADE SKETCH
(I40)



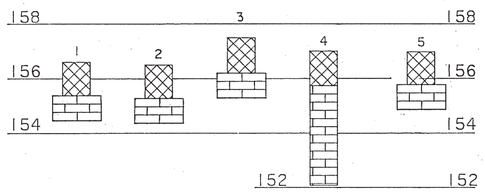
PLAN
SCALE 1:200

REQUIRED: 1) SUFFICIENT GROUND, ROCK AND CORING INFORMATION FOR BRIDGE FOUNDATION.

2) APPROXIAMATE EXISTING GROUND AND ROCK LINE.

NOTE: THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

NOTE: ALL DIMENSIONS ARE SHOWN IN METERS UNLESS NOTED OTHERWISE.



— LEGEND —

SILTY CLAY

LIMESTONE

HOLE NO. 1 ○ 1.22 — DEPTH DRILLED

2 ● CORE

GROUND AND ROCK ELEVATIONS

1. G.156.6 / R.155.4
2. G.156.6 / R.155.4
3. G.157.5 / R.156.2
4. G.157.0 / R.155.7
5. G.157.0 / R.155.8

NOTE: BORING DEPICTIONS SHOWN ON FOUNDATION DATA SHEET INDICATE GENERAL SOIL AND ROCK TYPES AT THE SPECIFIC BORING LOCATIONS.

TO ASSIST IN BID PREPARATION FOR FOUNDATION CONSTRUCTION, DETAILED ROCK AND SOIL DESCRIPTIONS AND, ON SOME PROJECTS, ROCK CORE SAMPLES ARE AVAILABLE FOR INSPECTION AT THE MATERIALS AND TESTS HEADQUARTERS AT 6601 CENTENNIAL BLVD., NASHVILLE, TN. (615) 350-4130.

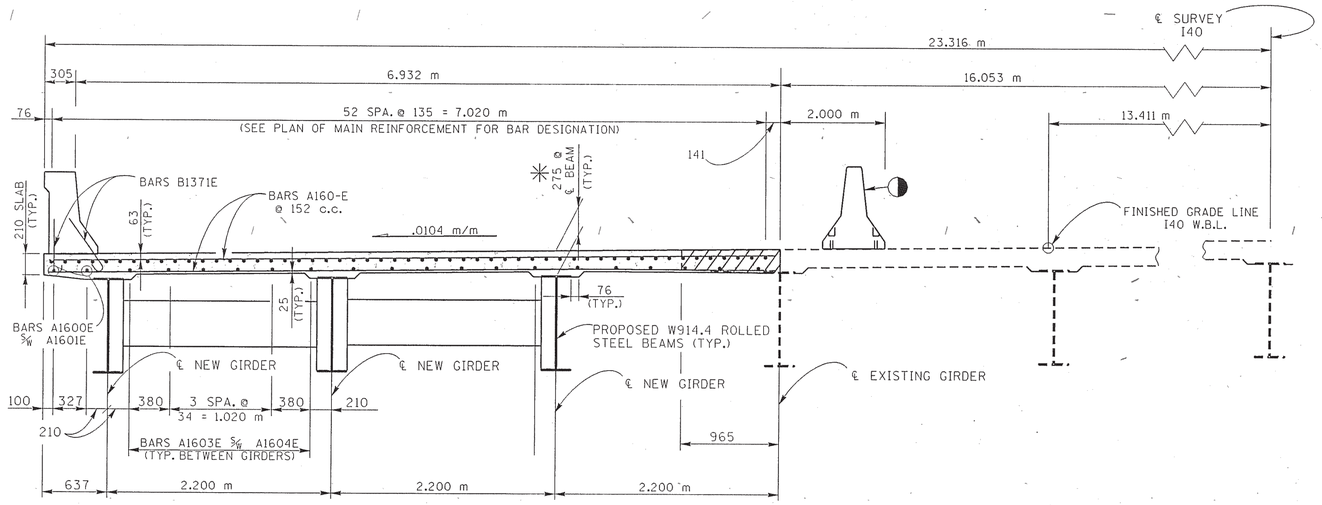
DESIGNED BY JOE PRINCE DATE 9-97
DRAWN BY DEBRA LAMAY DATE 11-97
SUPERVISED BY JHP/RLH DATE 10-97
CHECKED BY _____ DATE _____

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 1
FOUNDATION DATA
WIDENING I40
OVER
C.S.X. RAILROAD
STATION 14+301.416
BRIDGE ID. NO. 19I00400039
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

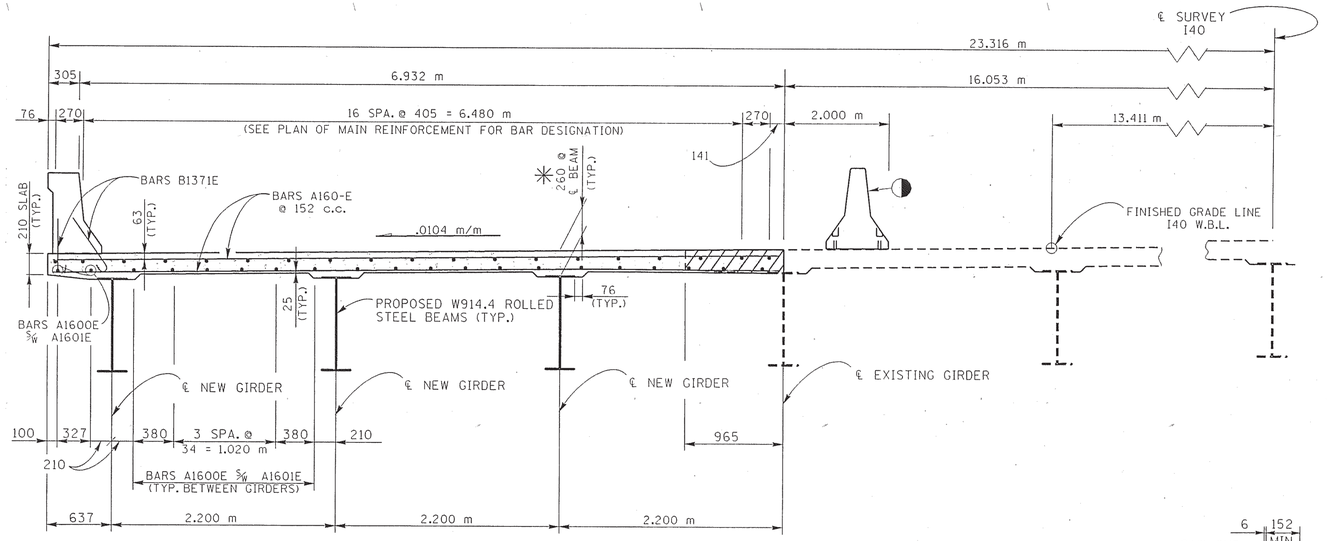
M-359-80

SUP082M.DGN



TYPICAL CROSS SECTION @ SUPPORT

(LOOKING FORWARD ON SURVEY)



TYPICAL CROSS SECTION @ MID-SPAN

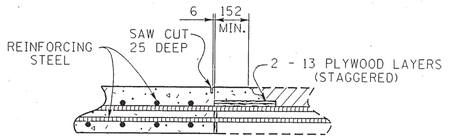
(LOOKING FORWARD ON SURVEY)

◑ DENOTES: INTERCONNECTED PORTABLE BARRIER RAIL TM-BPR-1 (REQUIRED DURING CONSTRUCTION).

NOTE: FOR PLACEMENT OF INTERCONNECTED PORTABLE BARRIER RAIL DURING EXPANSION JOINT REPLACEMENT AND DECK REPAIR, SEE ROADWAY PLANS.

✳ DENOTE: FROM TOP OF SLAB TO TOP OF WEB.

DESIGNED BY J. PRINCE DATE 08/97
DRAWN BY FARRAR DATE 11/97
SUPERVISED BY H.M.B. / R.L.H. DATE 11/97
CHECKED BY DATE /97



SLAB CONSTRUCTION JOINT DETAIL

DECK CONCRETE POURING SEQUENCE: SLAB CONSTRUCTION JOINTS MAY BE LOCATED AT THE CONTRACTOR'S OPTION SUBJECT TO THE FOLLOWING:
1) NO CONSTRUCTION JOINT MAY BE LOCATED CLOSER THAN 3 METERS OR FURTHER THAN 5 METERS FROM AN INTERIOR SUPPORT.
2) THE SLAB IN THE MIDDLE SECTION OF BOTH ADJACENT SPANS MUST BE POURED TO WITHIN AT LEAST 5 METERS OF THE SUPPORTS EITHER PRIOR TO OR CONCURRENTLY WITH THE SLAB OVER AN INTERIOR SUPPORT.
ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE "SLAB CONSTRUCTION JOINT DETAIL" SHOWN ABOVE.

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTES:

NOTE: NO PORTION OF THE PARAPET SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.

NOTE: THE CONCRETE DECK SHALL NOT BE POURED UNTIL ALL STRUCTURAL STEEL IS ERECTED AND ALL WELDING AND/OR BOLTING COMPLETE.

NOTE: WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR PARAPET. THE PARAPET SHALL NOT BE POURED UNTIL THE SLAB IS POURED AND CURED. ALSO SEE DRAWING NO. STD-1-1.

APPROVAL OF MATERIALS: NO FABRICATION SHALL BE STARTED UNTIL THE MATERIALS INVOLVED HAVE BEEN APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.

IDENTITY OF MAIN MATERIALS: SEE SECTION NO. 602 OF THE STANDARD SPECIFICATIONS.

SHOP ASSEMBLY: PROGRESSIVE SHOP ASSEMBLY WILL BE ALLOWED. SEE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, ART. 11.5.3.1 DIVISION II.

STRUCTURAL STEEL: SHALL CONFORM TO AASHTO M270M (ASTM A709) GRADE 250 UNLESS OTHERWISE NOTED. ALL STRUCTURAL STEEL FOR GIRDER FLANGES IN TENSION AND ALL WEBS SHALL MEET THE SUPPLEMENTAL REQUIREMENTS FOR LONGITUDINAL CHARPY V-NOTCH TESTS SPECIFIED IN AASHTO MATERIAL SPECIFICATIONS. ZONE 2 OF NON-FRACTURE CRITICAL CRITERIA SHALL APPLY.

WELDING: ANSI/AASHTO/AWS D1.5-95 BRIDGE WELDING CODE AND SECTION 602 OF THE STANDARD SPECIFICATIONS.

ADDITIONAL SHOP SPLICE NOTE: SHOP SPLICES NECESSARY DUE TO LENGTHS OR SIZE OF MATERIAL INVOLVED MAY BE ADDED BY THE FABRICATOR SUBJECT TO APPROVAL BY THE ENGINEER AND SHALL BE AT NO ADDITIONAL COST TO THE PROJECT.

ADDITIONAL FIELD SPLICE NOTE: FIELD SPLICES NECESSARY DUE TO LENGTHS INVOLVED MAY BE ADDED BY THE FABRICATOR SUBJECT TO APPROVAL BY THE ENGINEER AND SHALL BE AT NO ADDITIONAL COST TO THE PROJECT.

NOTE : THE CONTRACTOR SHALL SAW .025 METER DEEP INTO THE SLAB BEFORE REMOVING CONCRETE. ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE. WHEN PRACTICAL ALLPROPOSED (NEW) TRANSVERSE REINFORCING STEEL TO BE SPLICED TO EXISTING. THE CONTRACTOR SHALL NOT USE A HYDRALIC RAM MODIFIED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILAR HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM ALLOWABLE HAMMER SIZE IS THE 27 kg CLASS.

ESTIMATED QUANTITIES

CLASS "D" CONCRETE (BRIDGE DECKS) (m^3)	EPOXY COATED REINFORCING STEEL (kg)
97	15,823

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS UNLESS OTHERWISE NOTED.

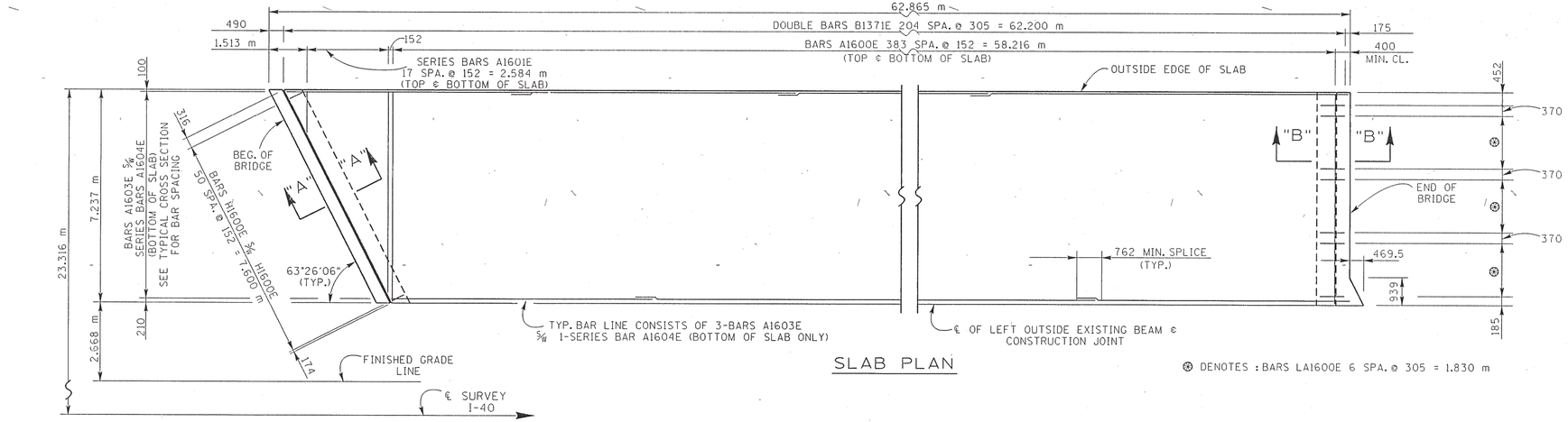
BRIDGE NO. 1
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE
WIDENING OF INTERSTATE 40
(WESTBOUND LANE)
OVER
C.S.X. RAILROAD
STA. 14+301.416
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. 20 REGISTERED ENGINEER STATE OF TENNESSEE
Hardie M. Brooks 3/26/98

CORRECT Edward P Wasserman
ENGINEER OF STRUCTURES

M-359-81

SUP082M.DGN



SLAB PLAN

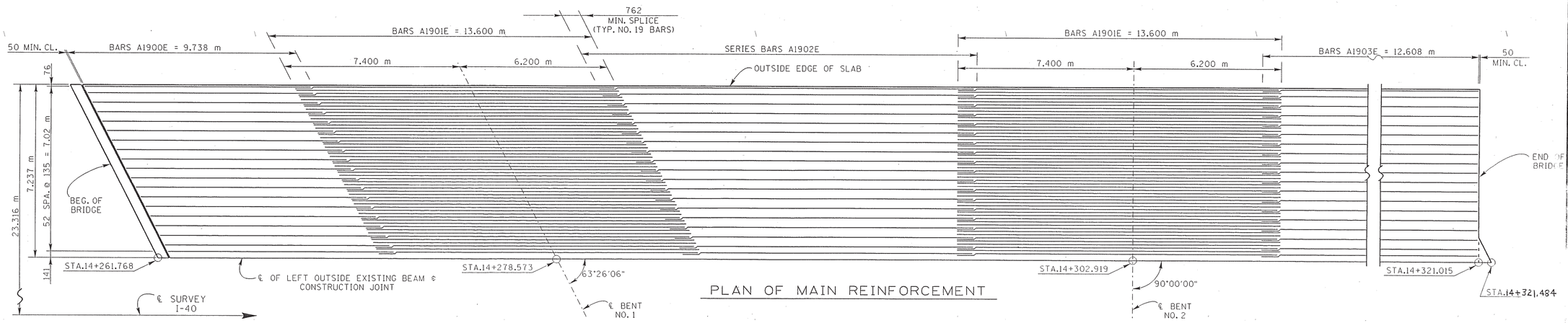
⊛ DENOTES : BARS LA1600E 6 SPA. @ 305 = 1.830 m

CONST. NO. 19005-3139-44

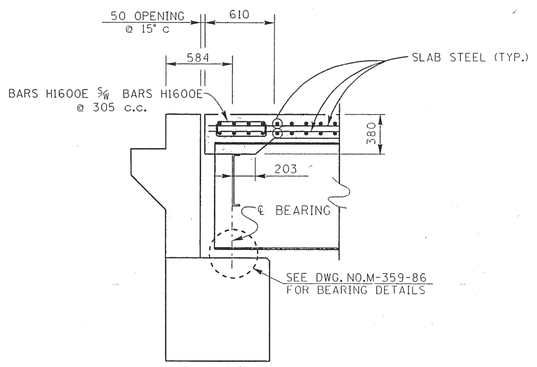
PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

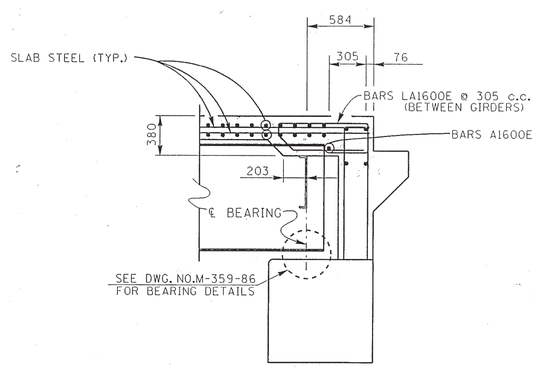
NO.	DATE	BY	BRIEF DESCRIPTION



PLAN OF MAIN REINFORCEMENT



SECTION "A-A"



SECTION "B-B"

DESIGNED BY J. PRINCE DATE 08/97
DRAWN BY FARRAR DATE 11/97
SUPERVISED BY H.M.B. / R.L.H. DATE 11/97
CHECKED BY DATE /97

METRIC

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS UNLESS OTHERWISE NOTED.

BRIDGE NO. 1
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE WIDENING OF INTERSTATE 40 (WESTBOUND LANE) OVER C.S.X. RAILROAD STA. 14+301.416 DAVIDSON COUNTY 1998

HARDIE N. BROOKS JR. REGISTERED ENGINEER STATE OF TENNESSEE 3/26/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-82

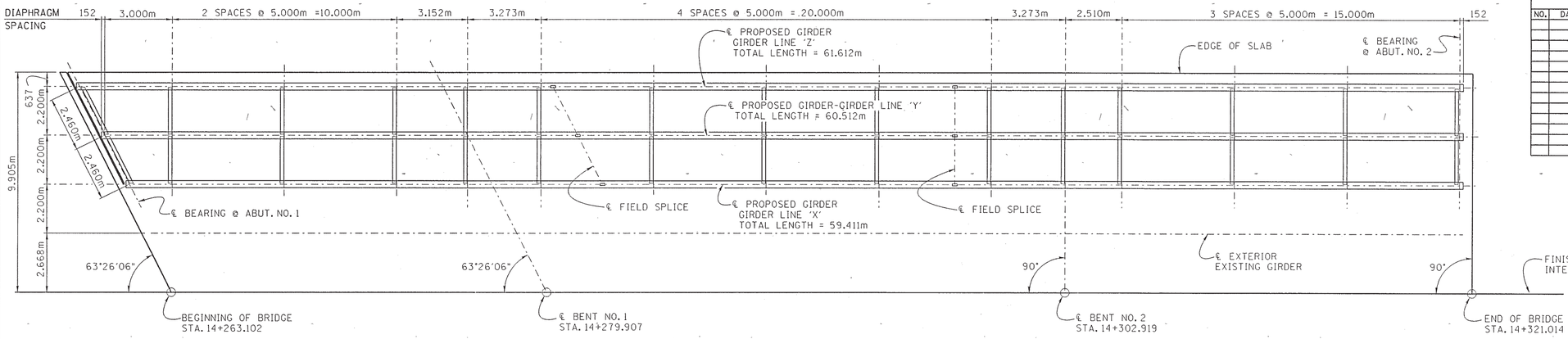
STL007M.DGN

CONST. NO. 19005-3139-44

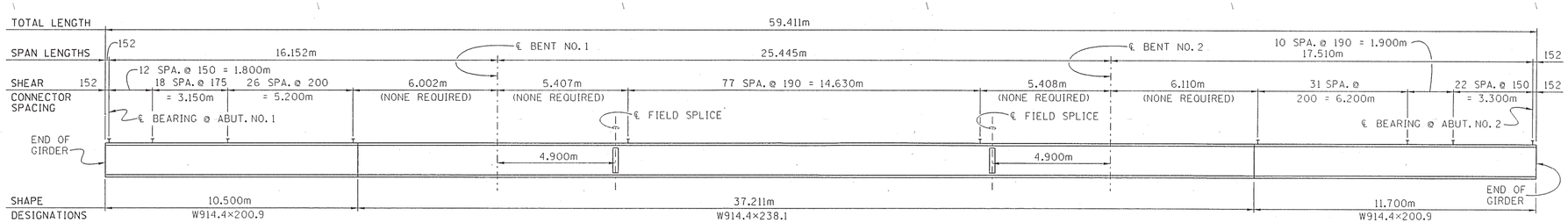
PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

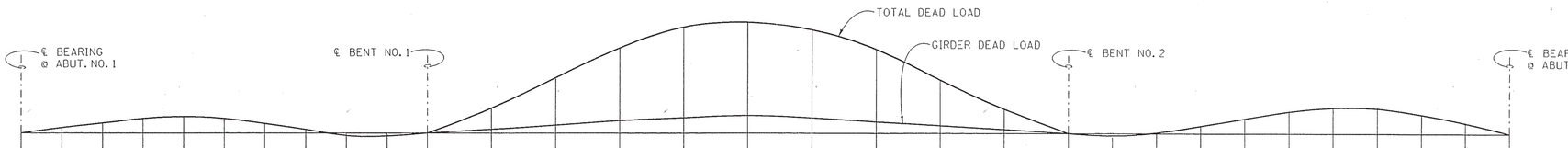


FRAMING PLAN



GIRDER ELEVATION

(GIRDER LINE 'X')

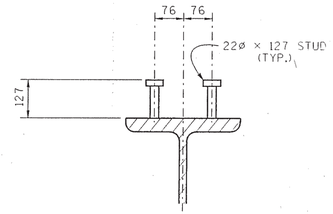


SPAN POINT	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
TOTAL DEAD LOAD	0	2	2	4	4	4	2	1	-1	-1	0	6	15	23	29	30	28	23	14	6	0	-1	0	2	5	6	7	7	5	3	0
DEAD LOAD BEAM	0	0	0	0	0	0	0	0	0	0	0	1	2	4	4	5	4	3	2	1	0	0	0	0	0	1	1	1	1	0	0

DEAD LOAD CORRECTION CURVE

(GIRDER LINE 'X')

DEAD LOAD CORRECTION CURVE: GIRDERS SHALL BE CAMBERED TO COMPENSATE FOR DEAD LOAD DEFLECTION AND VERTICAL CURVE. IF PRESTRESSED DECK PANELS ARE USED AND THE BEAMS ARE PROFILED AFTER PANELS ARE IN PLACE, REDUCE THE DEAD LOAD CORRECTION VALUES BY 25%.



SHEAR CONNECTOR DETAIL

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE DESIGNATED.

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS WIDENING OF INTERSTATE 40 (WESTBOUND LANE) OVER C. S. X. RAILROAD STATION 14+301.416 DAVIDSON COUNTY 1998

HARDIE M. BROOKS JR. REGISTERED ENGINEER 17571 STATE OF TENNESSEE
3/26/98

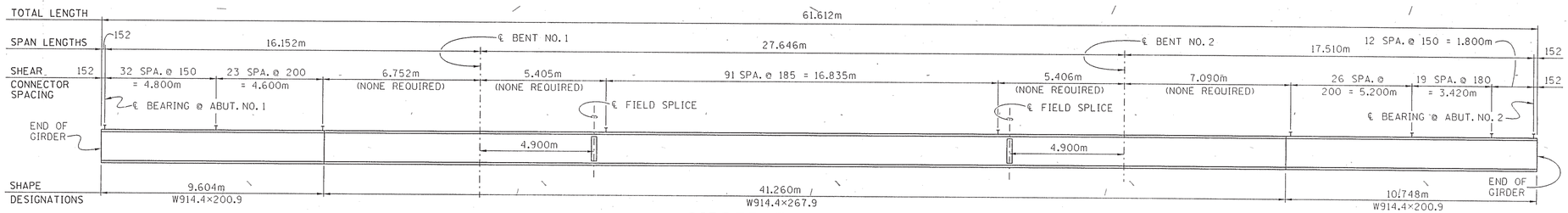
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY J. PRINCE DATE 12-97
DRAWN BY M. DYE DATE 1-98
SUPERVISED BY R.L.H. / H.M.B. DATE 1-98
CHECKED BY J. PRINCE DATE 2-98

M-359-83

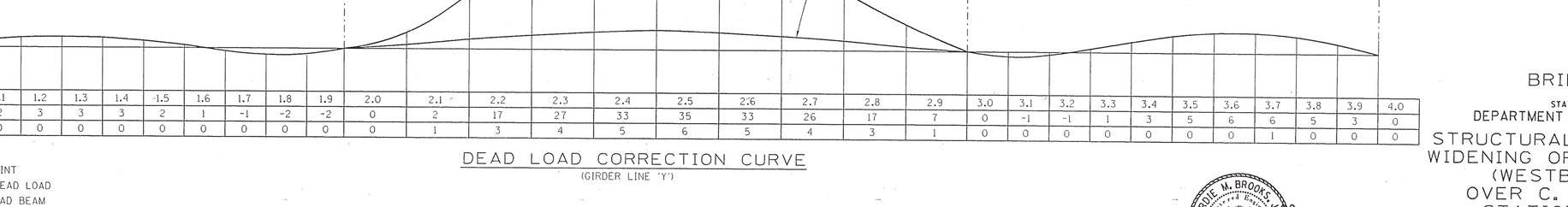
DATE/TIME: 03/26/98 10:05
USER: mwilliams
FILE: stl007m.dgn

STL007M.DGN



GIRDER ELEVATION

(GIRDER LINE 'Z')



SPAN POINT	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
TOTAL DEAD LOAD	0	1	2	2	2	1	0	-2	-2	-2	0	9	20	30	37	40	37	30	19	8	0	-2	-1	1	3	5	6	6	5	3	0
DEAD LOAD BEAM	0	0	0	0	0	0	0	-1	-1	0	0	1	3	5	6	7	6	5	3	1	0	0	0	0	0	0	0	0	0	0	0

DEAD LOAD CORRECTION CURVE

(GIRDER LINE 'Z')

GIRDER ELEVATION

(GIRDER LINE 'Y')

①	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
②	0	2	3	3	3	2	1	-1	-2	-2	0	2	17	27	33	35	33	26	17	7	0	-1	-1	1	3	5	6	6	5	3	0
③	0	0	0	0	0	0	0	0	0	0	0	1	3	4	5	6	5	4	3	1	0	0	0	0	0	0	0	1	0	0	0

DEAD LOAD CORRECTION CURVE

(GIRDER LINE 'Y')

① SPAN POINT
② TOTAL DEAD LOAD
③ DEAD LOAD BEAM

DEAD LOAD CORRECTION CURVE: GIRDERS SHALL BE CAMBERED TO COMPENSATE FOR DEAD LOAD DEFLECTION AND VERTICAL CURVE. IF PRESTRESSED DECK PANELS ARE USED AND THE BEAMS ARE PROFILED AFTER PANELS ARE IN PLACE, REDUCE THE DEAD LOAD CORRECTION VALUES BY 25%.

DESIGNED BY J. PRINCE DATE 12-97
DRAWN BY M. DYE DATE 1-98
SUPERVISED BY R.L.H. / H.M.B. DATE 1-98
CHECKED BY J. PRINCE DATE 2-98

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-[40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE DESIGNATED.

DIVISION OF HIGHWAYS METRIC CONSTRUCTION

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS WIDENING OF INTERSTATE 40 (WESTBOUND LANE) OVER C. S. X. RAILROAD STATION 14+301.416 DAVIDSON COUNTY 1998

HAROLD M. BROOKS 2520 REGISTERED ENGINEER STATE OF TENNESSEE
3/26/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359 34

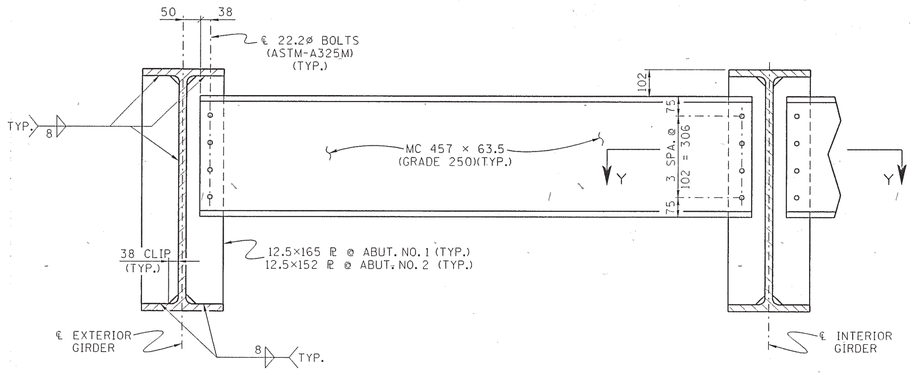
STL007M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-140-4(68)205	1998	

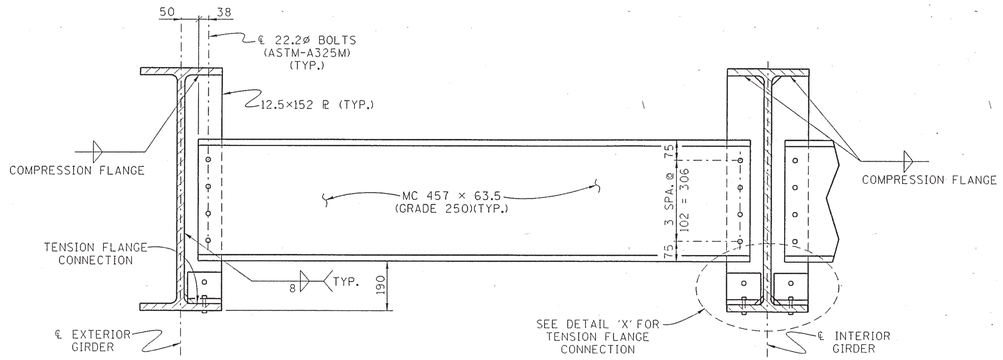
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

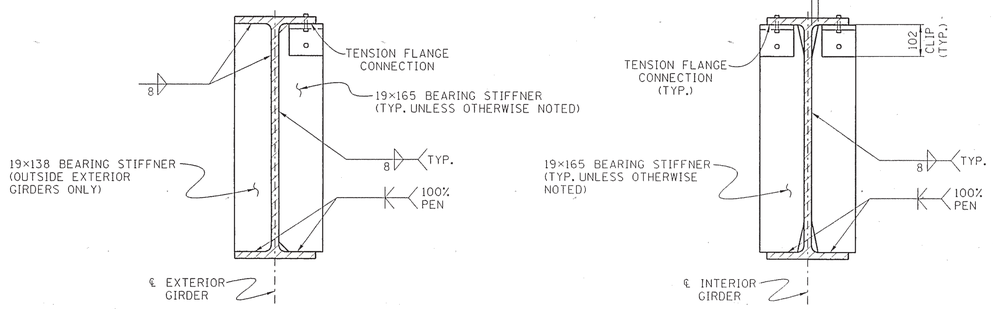


TYPICAL END DIAPHRAGM

(@ ABUTMENTS)

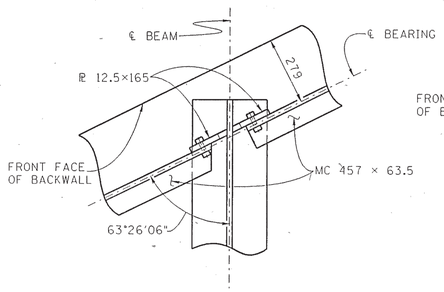


TYPICAL INTERMEDIATE DIAPHRAGM



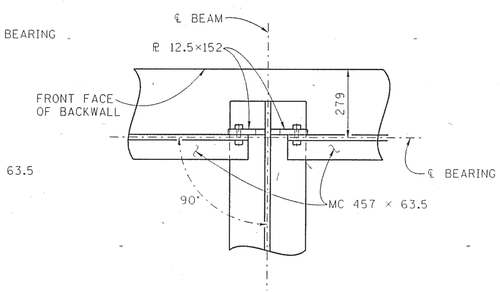
BEARING STIFFENER

(TYP. @ BENTS)



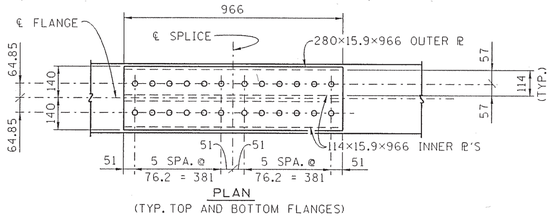
SECTION Y-Y

(@ ABUTMENT NO. 1)



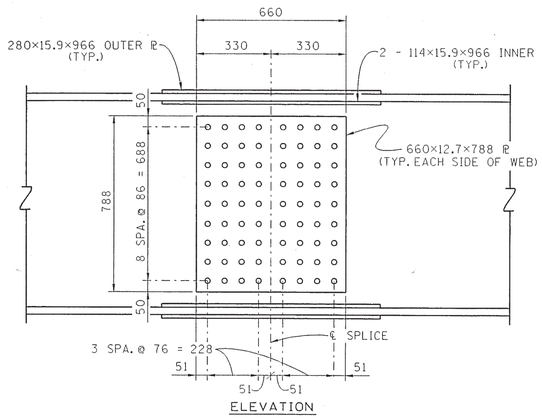
SECTION Y-Y

(@ ABUTMENT NO. 2)



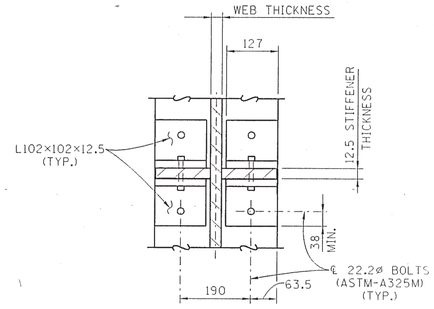
PLAN

(TYP. TOP AND BOTTOM FLANGES)

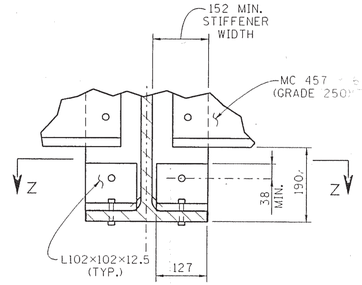


ELEVATION

FIELD SPLICE DETAILS



SECTION Z-Z



DETAIL 'X'

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE DESIGNATED.

FIELD CONNECTIONS: SHALL BE 22.2 ø HIGH TENSILE STRENGTH BOLTS ASTM-A325M (OR ASTM A490M) UNLESS OTHERWISE NOTED. SEE AASHTO SPECIFICATIONS ART. 11.3.2 DIVISION II AND SECTION 602 OF THE STANDARD SPECIFICATIONS.

NOTE: ALL STRUCTURAL STEEL TO BE ASTM A709 GRADE = 250MPa. UNLESS OTHERWISE NOTED.

HARDIE M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE 3/25/98

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

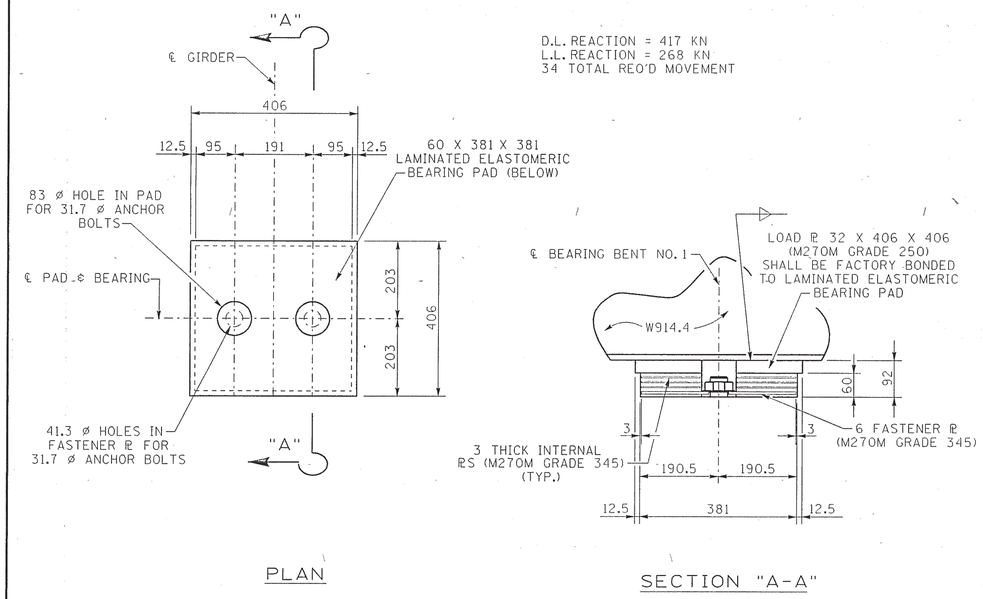
STRUCTURAL STEEL DETAILS
WIDENING OF INTERSTATE 40 (WESTBOUND LANE)
OVER C. S. X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

DESIGNED BY J. PRINCE DATE 12-97
DRAWN BY M. DYE DATE 1-98
SUPERVISED BY R.L.H. / H.M.B. DATE 1-98
CHECKED BY J. PRINCE DATE 2-98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-85

MIS060M.DGN



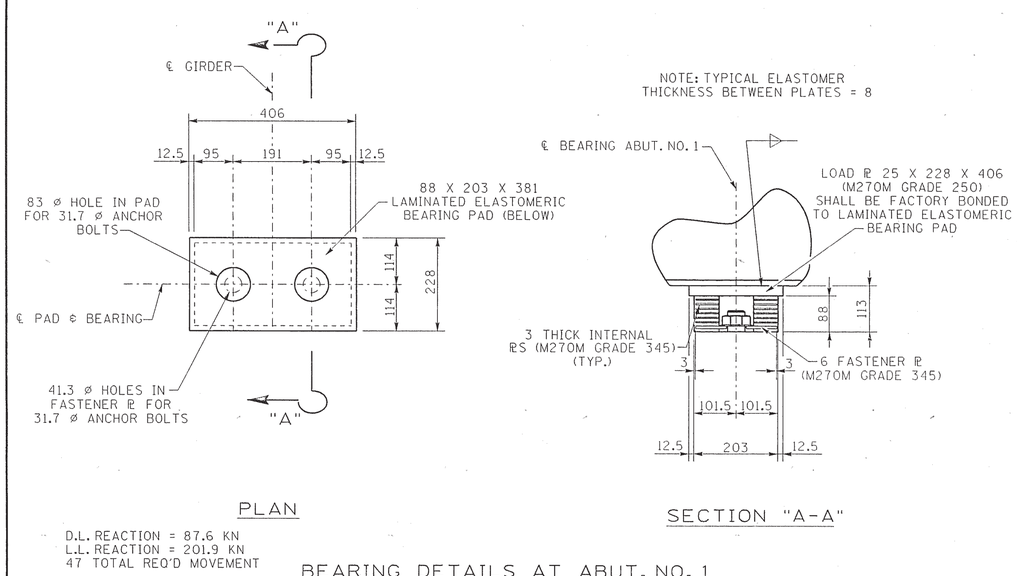
D.L. REACTION = 417 KN
L.L. REACTION = 268 KN
34 TOTAL REQ'D MOVEMENT

PLAN

SECTION "A-A"

BEARING DETAILS AT BENT NO. 1

NOTE: TYPICAL ELASTOMER THICKNESS BETWEEN PLATES = 9



NOTE: TYPICAL ELASTOMER THICKNESS BETWEEN PLATES = 8

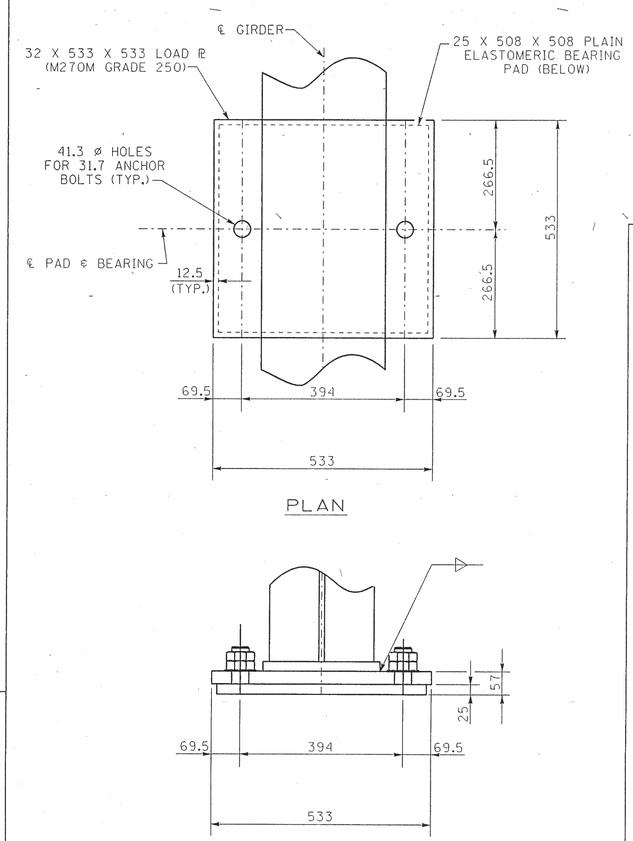
PLAN

SECTION "A-A"

D.L. REACTION = 87.6 KN
L.L. REACTION = 201.9 KN
47 TOTAL REQ'D MOVEMENT

BEARING DETAILS AT ABUT. NO. 1

DESIGNED BY	J.PRINCE	DATE	12-97
DRAWN BY	M. CHILDRESS	DATE	01-98
SUPERVISED BY	H.M.B. / R.L.H.	DATE	01-98
CHECKED BY	J.PRINCE	DATE	01-98



PLAN

ELEVATION

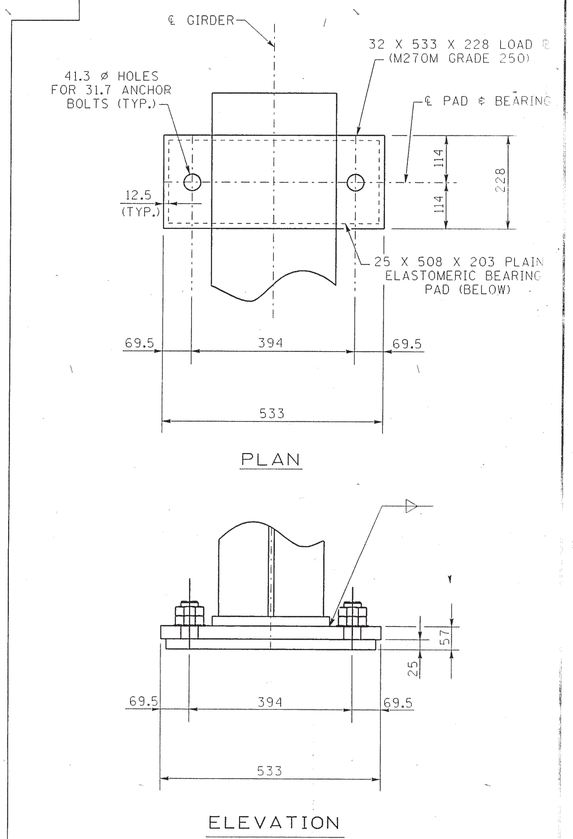
BEARING DETAILS AT BENT NO. 2

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I-40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

ELEVATION

BEARING DETAILS AT ABUT. NO. 2

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE DESIGNATED.

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BEARING DEVICE DETAILS
WIDENING OF INTERSTATE 40
(WESTBOUND LANE)
OVER CSX RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-86

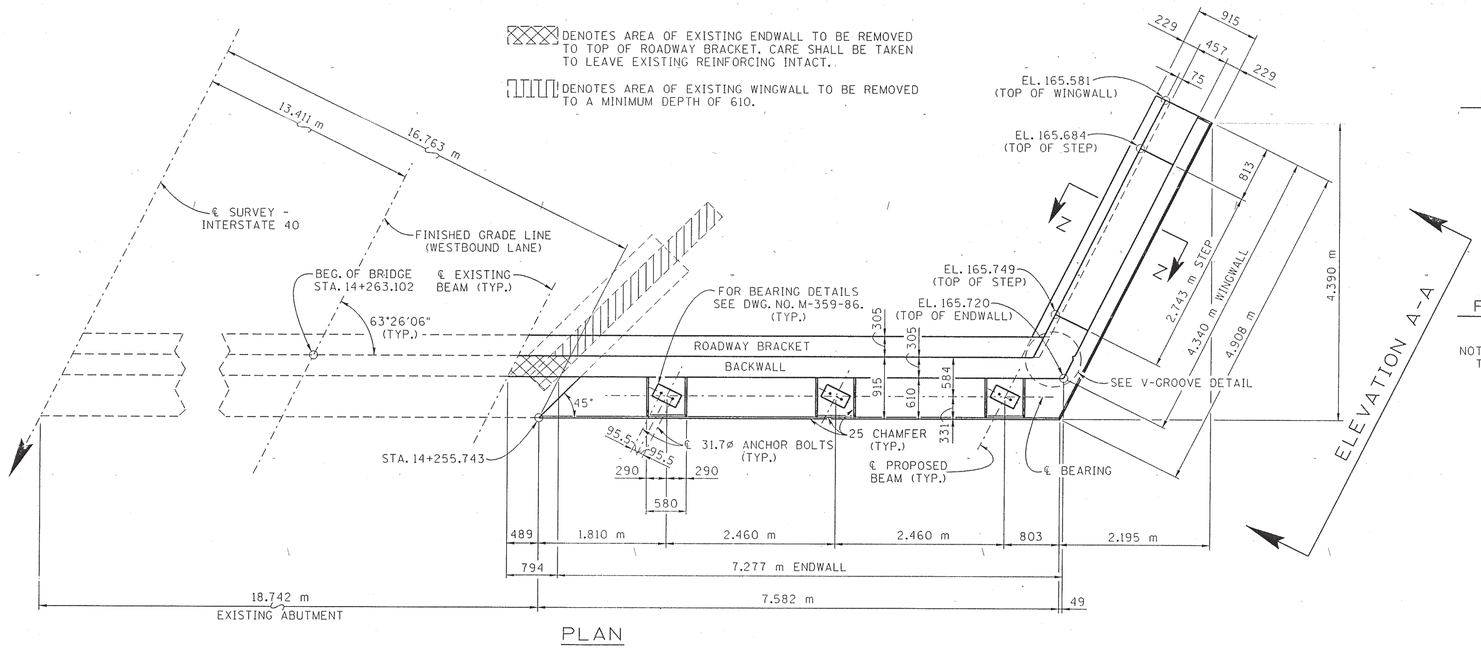
ABT100M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-140-4(68)205	1998	

REVISIONS

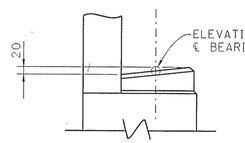
NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

ELEVATION A-A

DIRECTION OF SURVEY - INTERSTATE 40



RISER BLOCK SLOPE DETAIL

(TYP. EACH RISER BLOCK)

NOTE: RISER BLOCK BEARING SURFACES TO CONFORM TO BOTTOM OF BEAM GRADE.

NOTE: WHEN POURING ABUTMENT BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. IF THE CONTRACTOR ELECTS TO DRILL THE HOLES FOR THE ANCHOR BOLTS, THE REINFORCING STEEL SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE DRILLING.

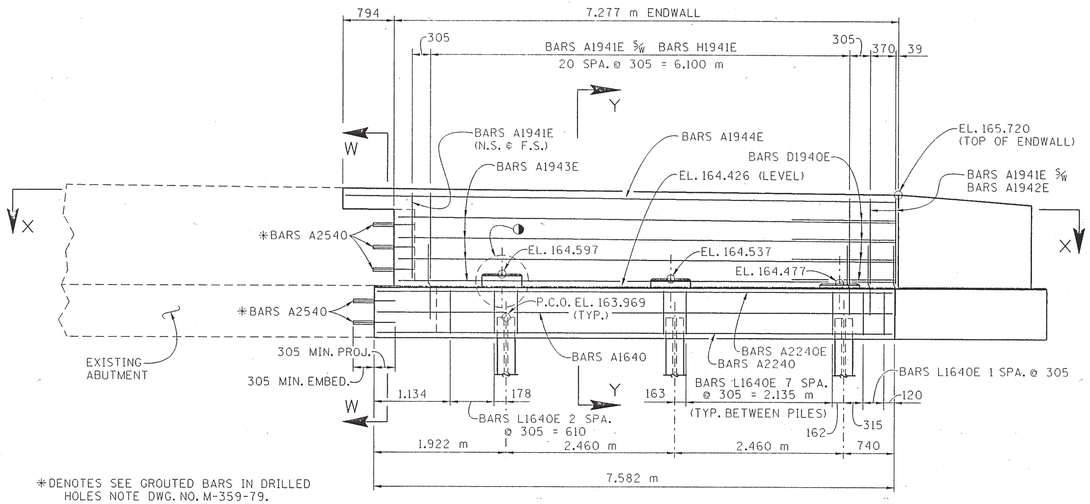
NOTE: RISER BLOCKS SHALL BE POURED MONOLITHICALLY WITH THE ABUTMENT BEAM.

NOTE: WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOSTS AND PARAPETS. FOR DETAILS OF WINGPOSTS AND PARAPET, SEE STANDARD DWG. STDM-1-1.

NOTE: THE GIRDERS SHALL BE IN PLACE PRIOR TO POURING THE ABUTMENT BACKWALL. AT LEAST THE TOP 305 mm OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE EXPANSION JOINT CLOSURE POUR.

NOTE: COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE BRIDGE RAIL SYSTEM.

NOTE: WINGBEAM PILES (MAXIMUM LENGTH OF 6 METERS) SHALL BE DRIVEN TO THE PLANS TIP ELEVATION OR REFUSAL.

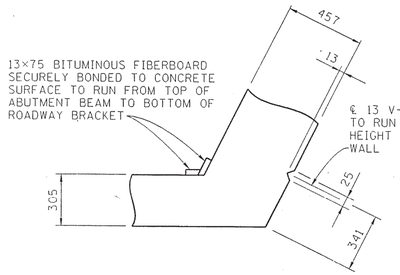


*DENOTES SEE GROUTED BARS IN DRILLED HOLES NOTE DWG. NO. M-359-79.

ELEVATION

(LOOKING BACK ON SURVEY)

◑DENOTES SEE REINFORCED RISER BLOCK DETAIL DWG. NO. M-359-88.



V-GROOVE DETAIL

ESTIMATED QUANTITIES

CLASS 'A' CONCRETE (BRIDGES) m³	STEEL BAR REINFORCEMENT (BRIDGES) kg	EPOXY COATED REINFORCING STEEL kg
14	465	863

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE DESIGNATED.

DIVISION OF HIGHWAYS METRIC STRUCTURES

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 1
WIDENING OF INTERSTATE 40
(WESTBOUND LANE)
OVER C. S. X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, REGISTERED ENGINEER, STATE OF TENNESSEE, 3/26/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY	J. PRINCE	DATE 12-97
DRAWN BY	M. DYE	DATE 1-98
SUPERVISED BY	R.L.H. / H.M.B.	DATE 1-98
CHECKED BY	J. PRINCE	DATE 2-98

M-359-87

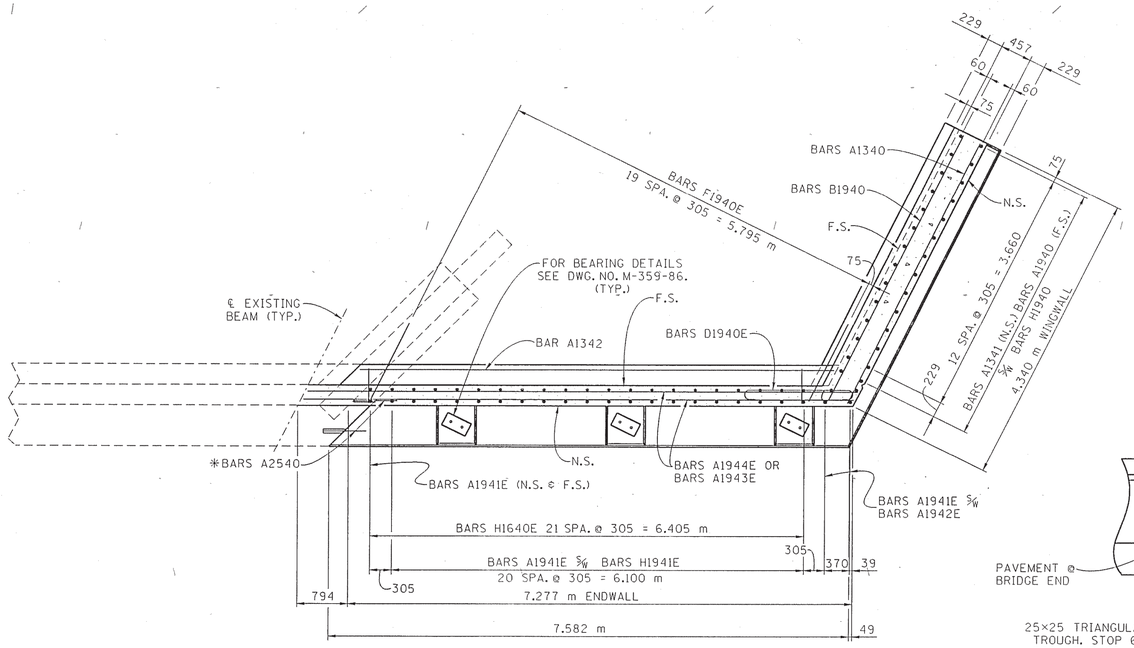
ABT100M.DGN

CONST. NO. 19005-3139-44

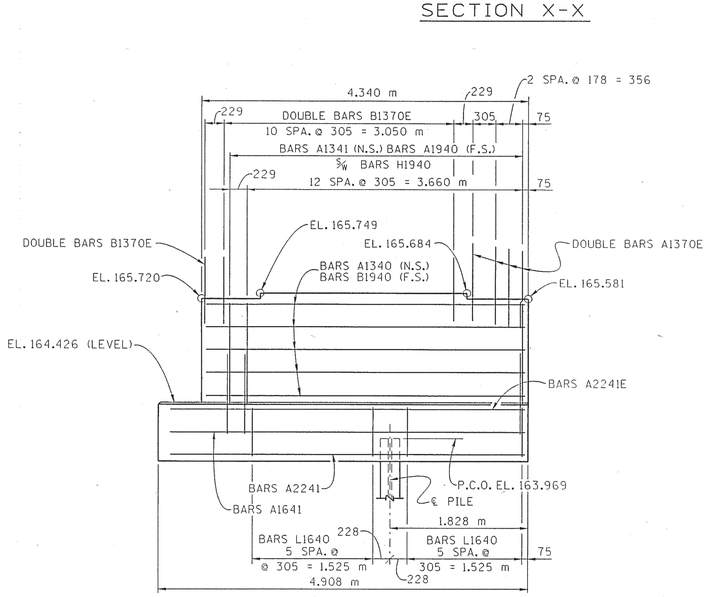
PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

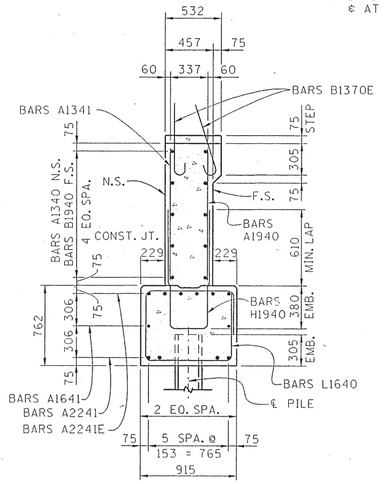
NO.	DATE	BY	BRIEF DESCRIPTION



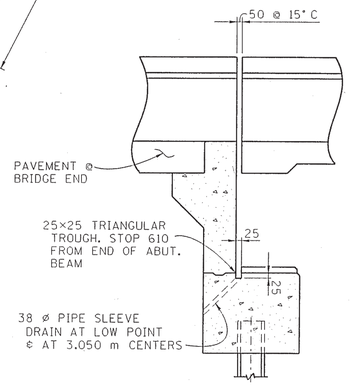
SECTION X-X



ELEVATION A-A

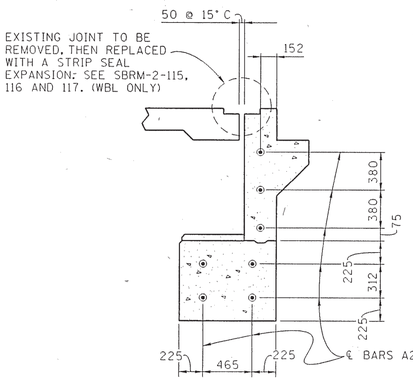


SECTION Z-Z



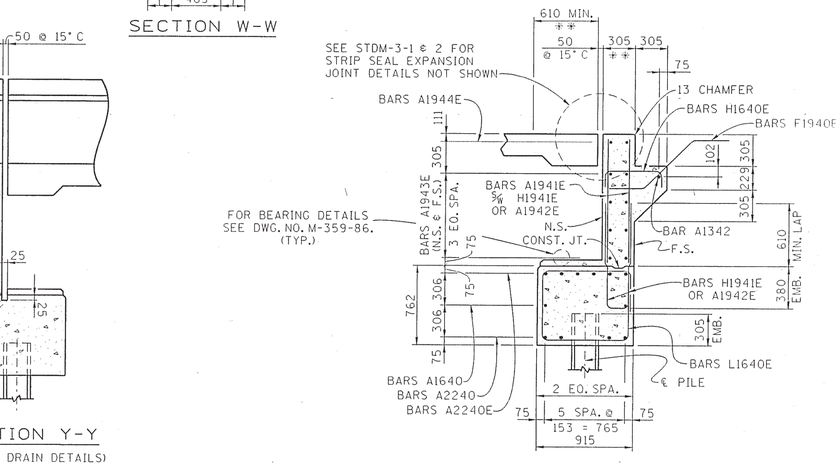
SECTION Y-Y

(SHOWING DRAIN DETAILS)



SECTION W-W

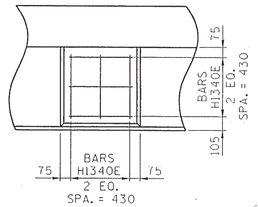
*DENOTES SEE GROUTED BARS IN DRILLED HOLES NOTE DWG. NO. M-359-79.



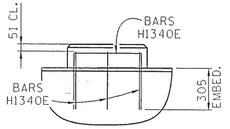
SECTION Y-Y

**DENOTES: TO BE POURED AFTER ALL OTHER DECK CONCRETE IS POURED AND EXPANSION BROUGHT TO PROPER GRADE AND SLOPE.

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE DESIGNATED.



PLAN



ELEVATION

REINFORCED RISER BLOCK DETAIL

HAROLD M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE 3/25/98

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

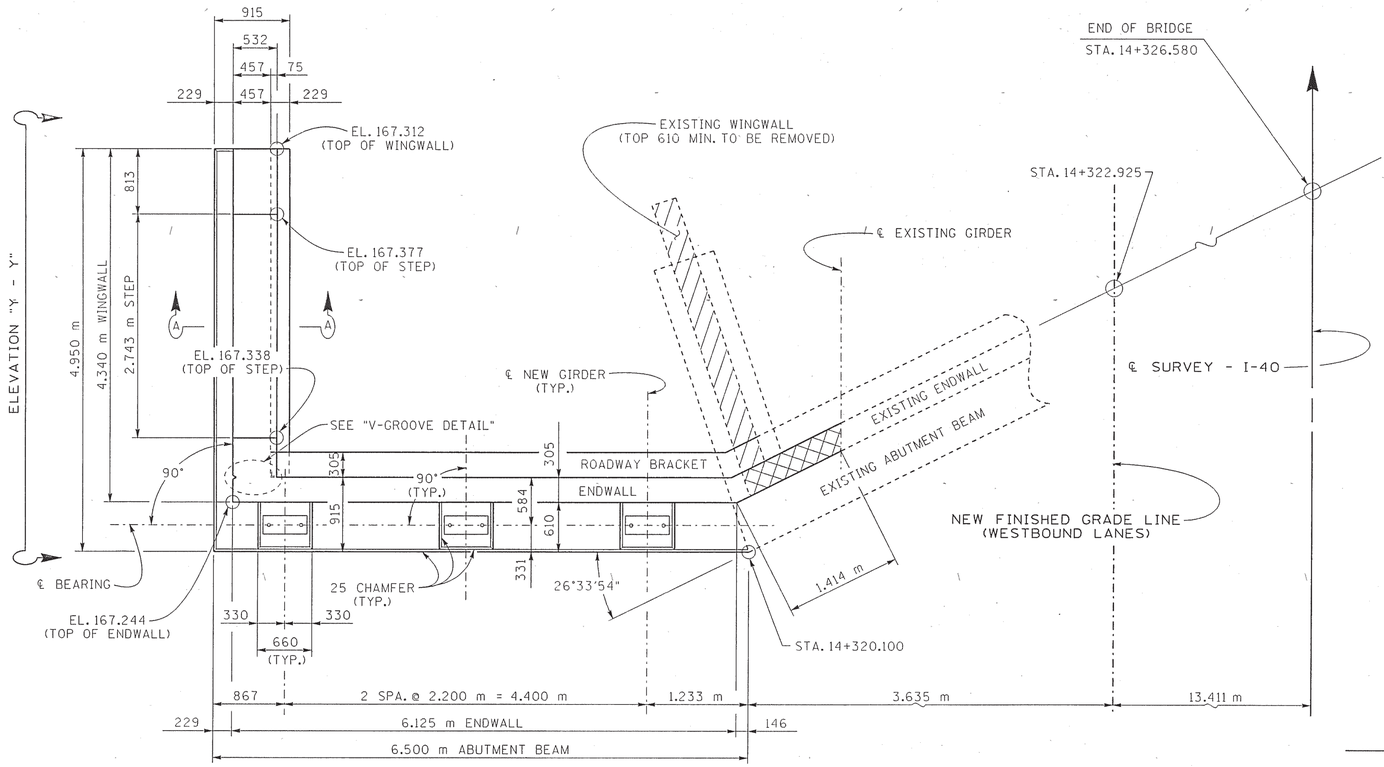
ABUTMENT NO. 1 DETAILS
WIDENING OF INTERSTATE 40
(WESTBOUND LANE)
OVER C. S. X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

CORRECT Edward A Wasserman
ENGINEER OF STRUCTURES

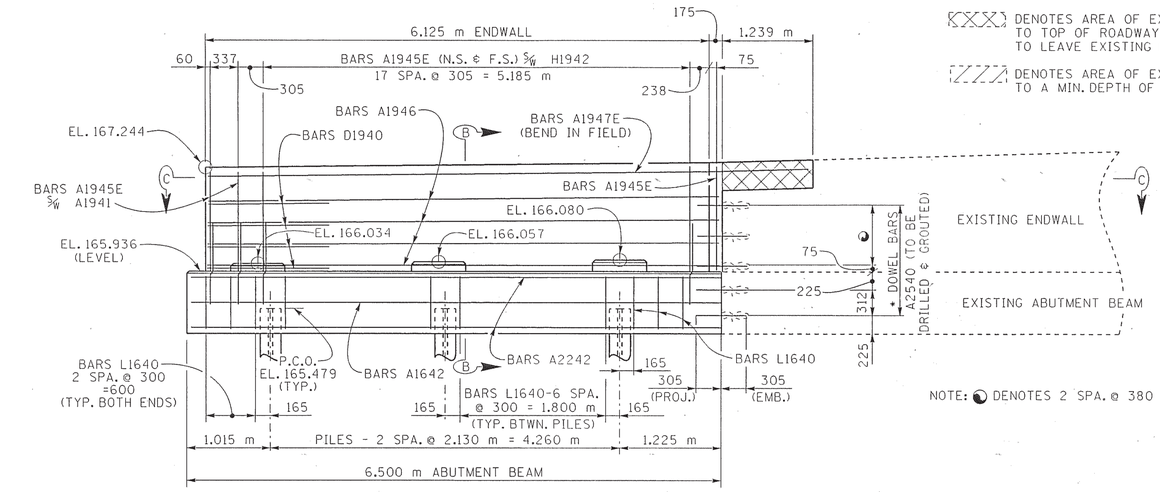
DESIGNED BY	J. PRINCE	DATE 12-97
DRAWN BY	M. DYE	DATE 1-98
SUPERVISED BY	R.L.H. / H.M.B.	DATE 1-98
CHECKED BY	J. PRINCE	DATE 2-98

M-359-88

ABT098M



PLAN



ELEVATION

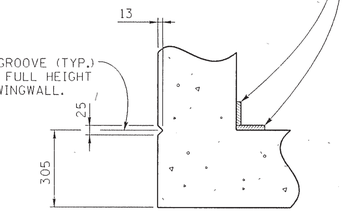
(LOOKING FORWARD ON SURVEY)

XXXX DENOTES AREA OF EXISTING ENDWALL TO BE REMOVED TO TOP OF ROADWAY BRACKET. CARE SHALL BE TAKEN TO LEAVE EXISTING REINFORCING INTACT.

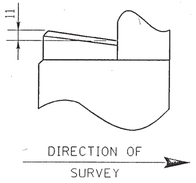
DENOTES AREA OF EXISTING WINGWALL TO BE REMOVED TO A MIN. DEPTH OF 610.

NOTE: ● DENOTES 2 SPA. @ 380 = 760

13 × 75 BITUMINOUS FIBERBOARD SECURELY BONDED TO CONCRETE SURFACE RUNNING FROM BOTTOM OF ROADWAY BRACKET TO TOP OF ABUTMENT BEAM TO PREVENT WATER BLEED-THROUGH.

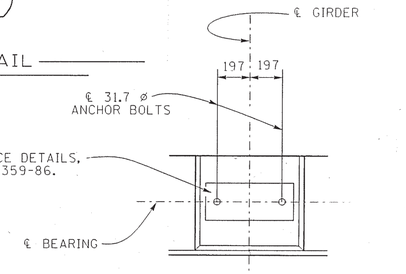


V-GROOVE DETAIL



RISER BLOCK SLOPE DETAIL

NOTE: RISER BLOCK BEARING PAD SURFACES TO CONFORM TO BOTTOM OF BEAM GRADE.



DETAIL "X"

(SHOWING ANCHOR BOLT SPACING)

ESTIMATED QUANTITIES

CLASS "A" CONCRETE M3	STEEL BAR REINFORCEMENT kg	EPOXY COATED REINFORCING STEEL kg
13	1001	242

NOTE: COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN UNIT THE UNIT PRICE BID FOR THE BRIDGE RAIL SYSTEM.

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

NOTE: WHEN POURING ABUTMENT BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. IF THE CONTRACTOR ELECTS TO DRILL THE HOLES FOR THE ANCHOR BOLTS, THE REINFORCING STEEL SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE DRILLING. BOLT PROJECTION = 110 mm.

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

DIVISION OF METRIC ACTIVITIES

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 2 WIDENING INTERSTATE 40 (WESTBOUND LANES) OVER C.S.X. RAILROAD STATION 14+301.416 DAVIDSON COUNTY 1998

HARDIE M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE 13/96/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY	JOE PRINCE	DATE	12/97
DRAWN BY	JERRE PATTON	DATE	1/98
SUPERVISED BY	J.M.P. / R.L.M.	DATE	1/98
CHECKED BY	JOE PRINCE	DATE	1/98

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

M-359 89

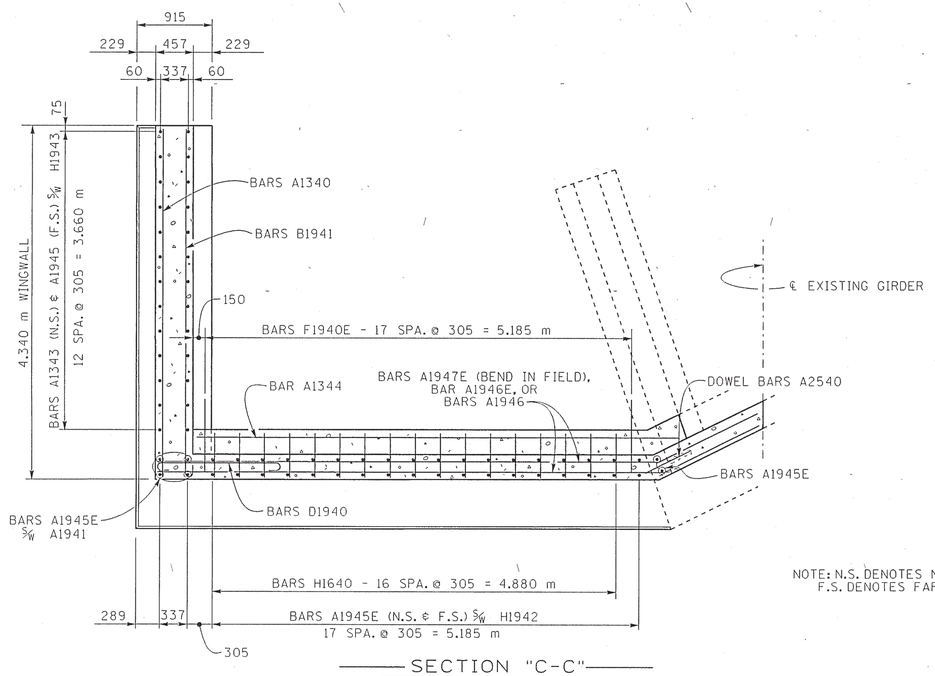
ABT098M

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

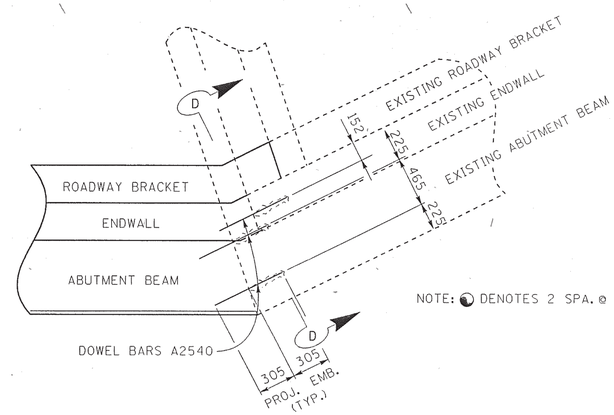
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



SECTION "C-C"

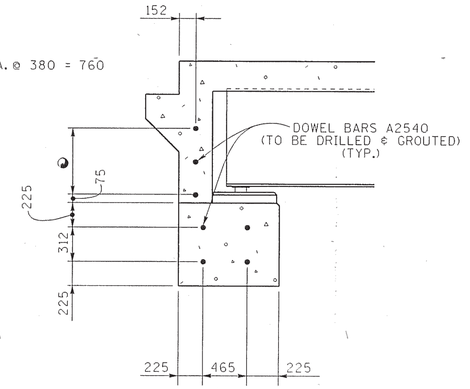
NOTE: N.S. DENOTES NEAR SIDE
F.S. DENOTES FAR SIDE



PART-PLAN

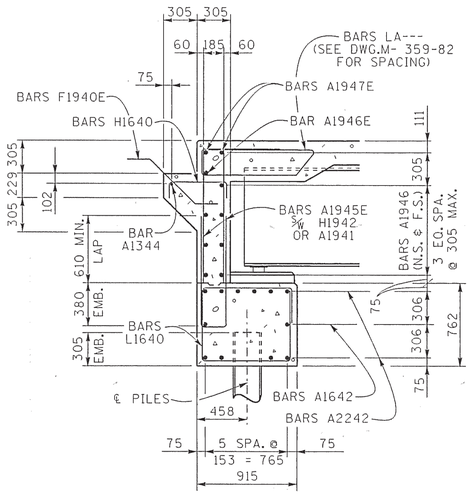
(SHOWING DOWEL BAR PLACEMENT)

NOTE: ◐ DENOTES 2 SPA. @ 380 = 760

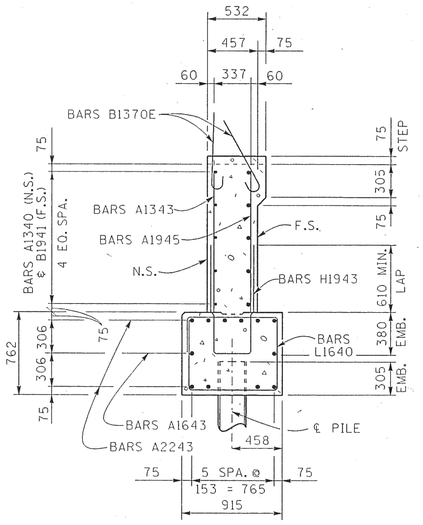


SECTION "D-D"

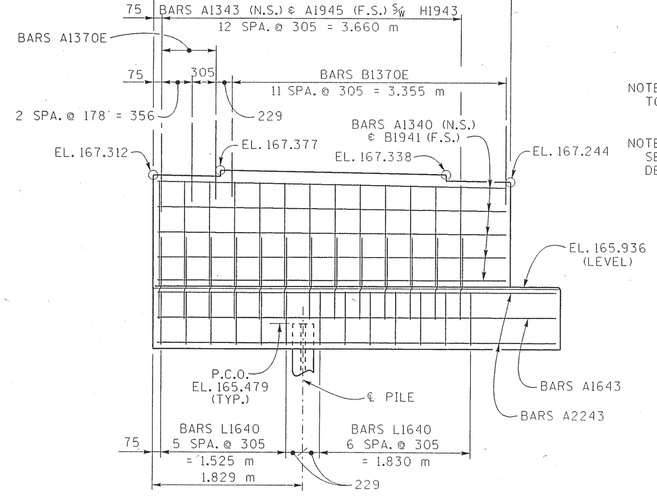
(SHOWING DOWEL BAR PLACEMENT)



SECTION "B-B"



SECTION "A-A"



ELEVATION "Y-Y"

NOTE: WINGBEAM PILES (MAXIMUM LENGTH OF 6 m) SHALL BE DRIVEN TO THE PLANS TIP ELEVATION OR REFUSAL.

NOTE: WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOST AND BRIDGERAIL. FOR DETAILS OF WINGPOST AND BRIDGERAIL, SEE SEE STD. DWG. NO. STDM-1-1.

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

DIVISION OF STRUCTURES METRIC

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 2 DETAILS
WIDENING INTERSTATE 40
(WESTBOUND LANES)
OVER C.S.X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 3/06/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY	JOE PRINCE	DATE	12/97
DRAWN BY	JERRE PATTON	DATE	1/98
SUPERVISED BY	J.H.P. / R.L.H.	DATE	1/98
CHECKED BY	JOE PRINCE	DATE	1/98

M-359-90

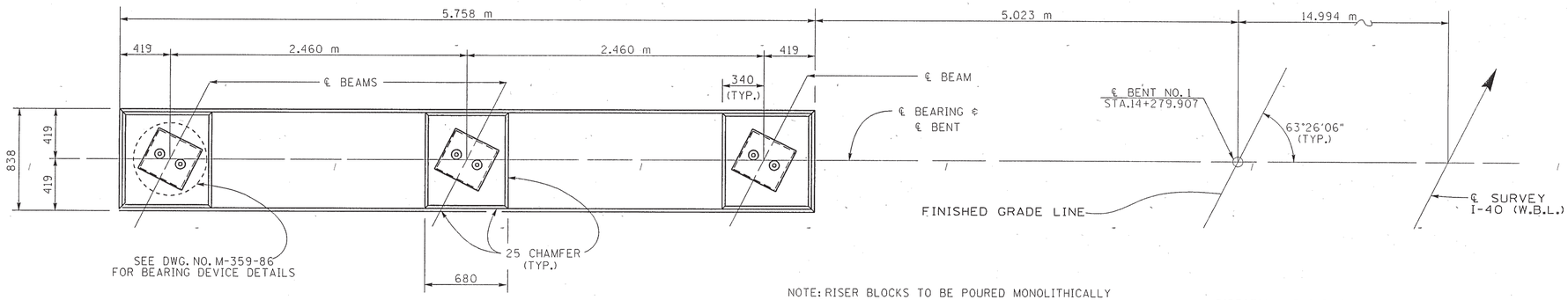
BNT057M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

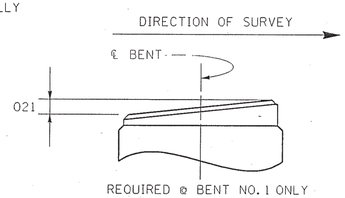
NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

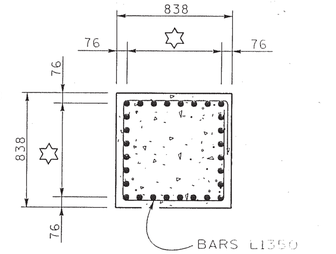
NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

COLUMN STEEL TO EXTEND 864 INTO CAP BEAM.



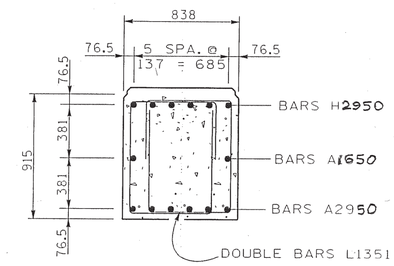
RISER BLOCK SLOPE DETAIL

NOTE : RISER BLOCK BEARING SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

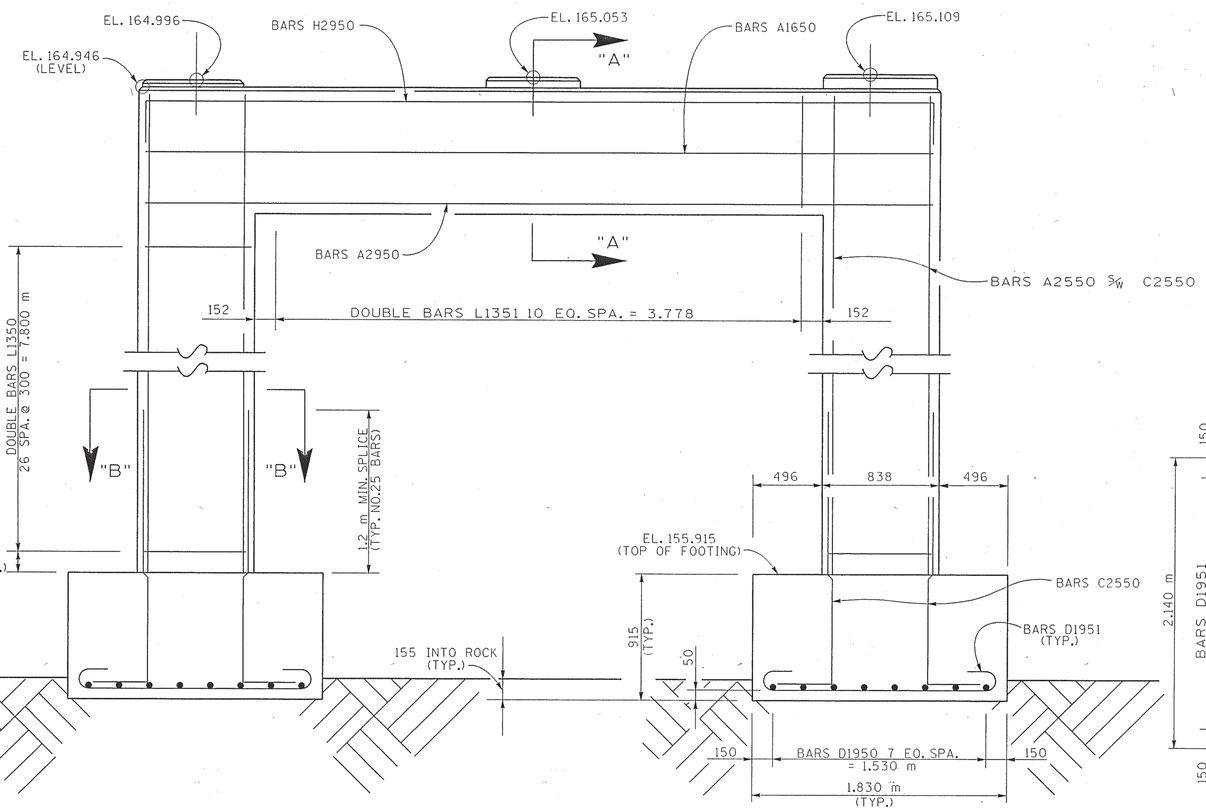


SECTION "B-B"

☆ DENOTES : BARS A2550 7 SPA. @ 98 = 686

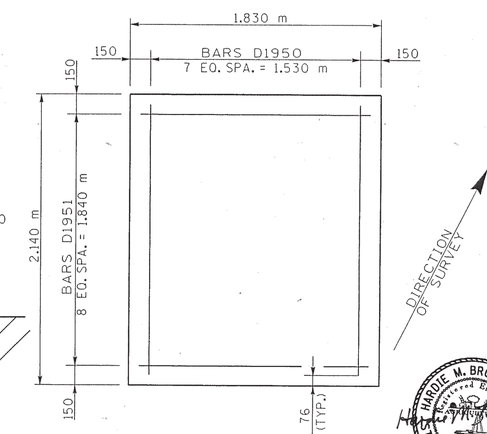


SECTION "A-A"



ELEVATION

(LOOKING FORWARD ON SURVEY)



PLAN OF FOOTING

ESTIMATED QUANTITIES

ITEM	CLASS "A" CONCRETE M3	STEEL BAR REINFORCEMENT kg
BENT NO. 2	23	3339

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT NO. 1
WIDENING OF INTERSTATE 40
(WESTBOUND LANE)
OVER
C.S.X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 3/06/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY JOE PRINCE DATE 11/97
DRAWN BY FARRAR DATE 12/97
SUPERVISED BY H.M.B. / R.L.H. DATE 12/97
CHECKED BY DATE

M-359-91

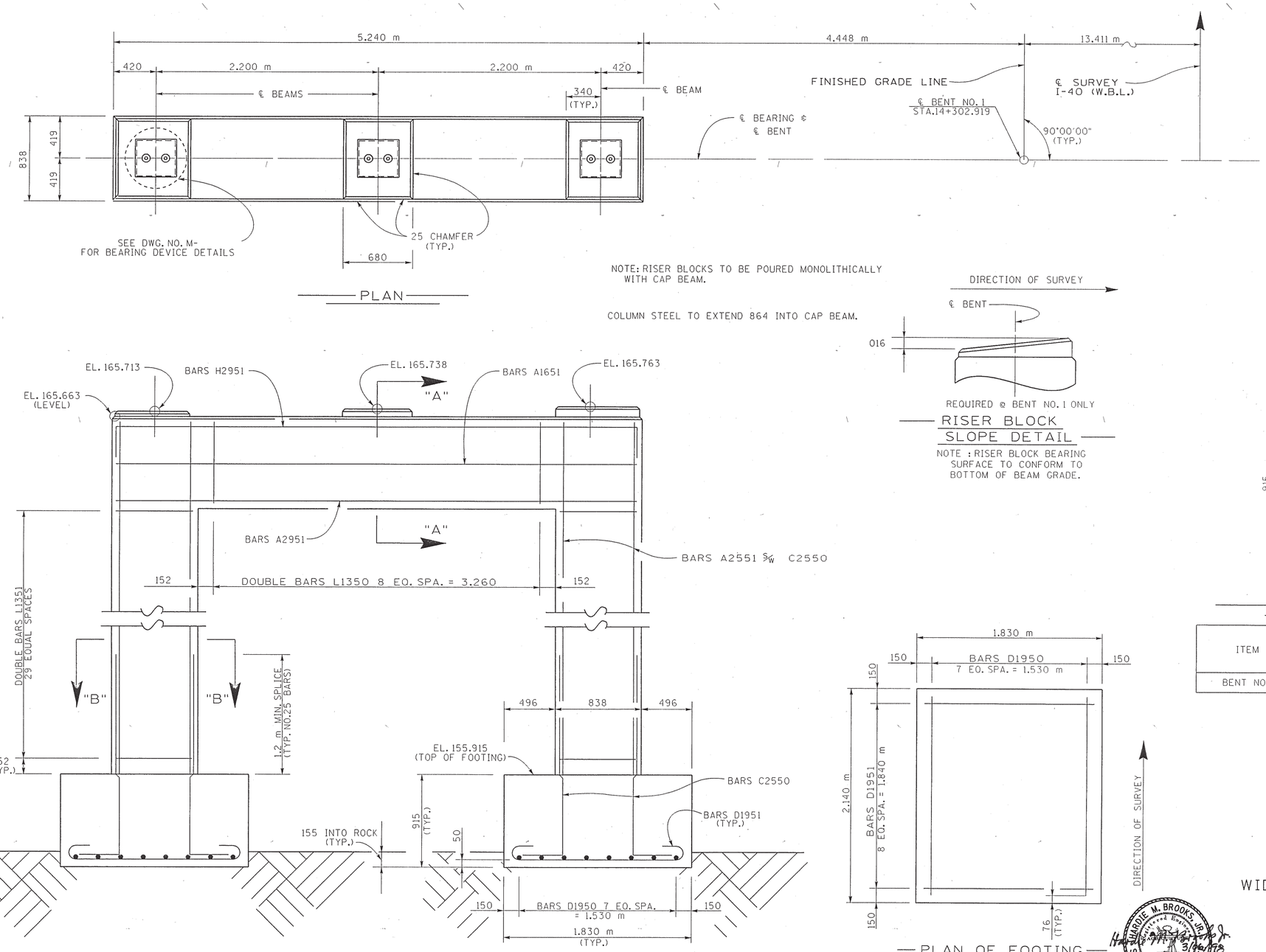
BNT057M.DGN

CONST. NO. 19005-3139-42

PROJECT NO.	YEAR	SHEET
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

COLUMN STEEL TO EXTEND 864 INTO CAP BEAM.

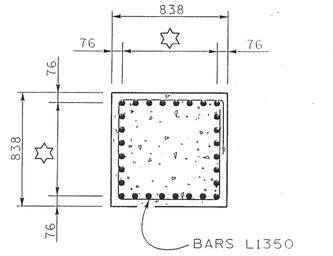
RISER BLOCK SLOPE DETAIL

NOTE : RISER BLOCK BEARING SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

ELEVATION

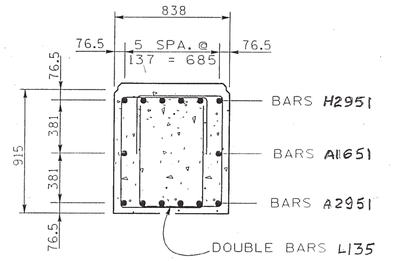
(LOOKING FORWARD ON SURVEY)

PLAN OF FOOTING



SECTION "B-B"

DENOTES : BARS A2551 7 SPA. @ 98 = 686



SECTION "A-A"

ESTIMATED QUANTITIES

ITEM	CLASS "A" CONCRETE M3	STEEL BAR REINFORCEMENT kg
BENT NO. 1	24	3321

DIVISION OF METRIC STRUCTURES

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT NO. 2
WIDENING OF INTERSTATE 40
(WESTBOUND LANE)
OVER
C.S.X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

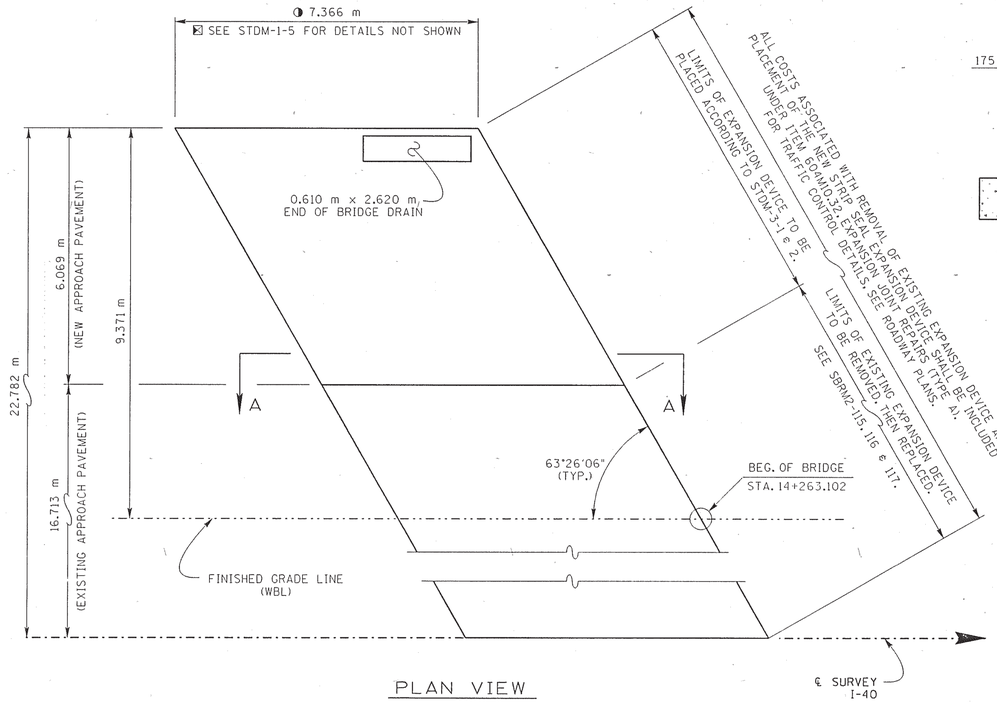
HARDIE M. BROOKS, JR. Registered Engineer STATE OF TENNESSEE 3/06/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY JOE PRINCE DATE 11/97
DRAWN BY FARRAR DATE 12/97
SUPERVISED BY H.M.B. / R.L.H. DATE 12/97
CHECKED BY DATE

M-359-92

MIS058M.DGN

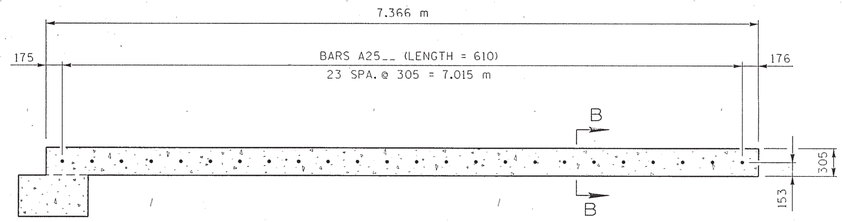


PLAN VIEW

(SHOWING APPROACH PAVEMENT & EXPANSION DEVICE @ ABUT. NO. 1 - WBL)

⊠ DENOTES Ⓐ JOINT SEAL SYSTEM, AS SHOWN IN SECTION D-D OF STDM-1-5 IS TO BE OMMITTED.

◑ DENOTES LENGTH OF REINFORCED CONCRETE PAVEMENT TO MATCH THAT OF THE EXISTING CONCRETE PAVEMENT, REINFORCING STEEL, ETC. IS TO BE MODIFIED ACCORDINGLY.



SECTION "A-A"

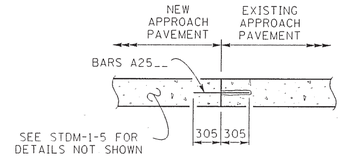
(SHOWING PLACEMENT OF DOWEL BARS A25__ INTO EXISTING CONCRETE APPROACH @ ABUT. NO. 1.) (ABUT. NO. 2 IS SIMILAR.)

CONST. NO. 19004-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

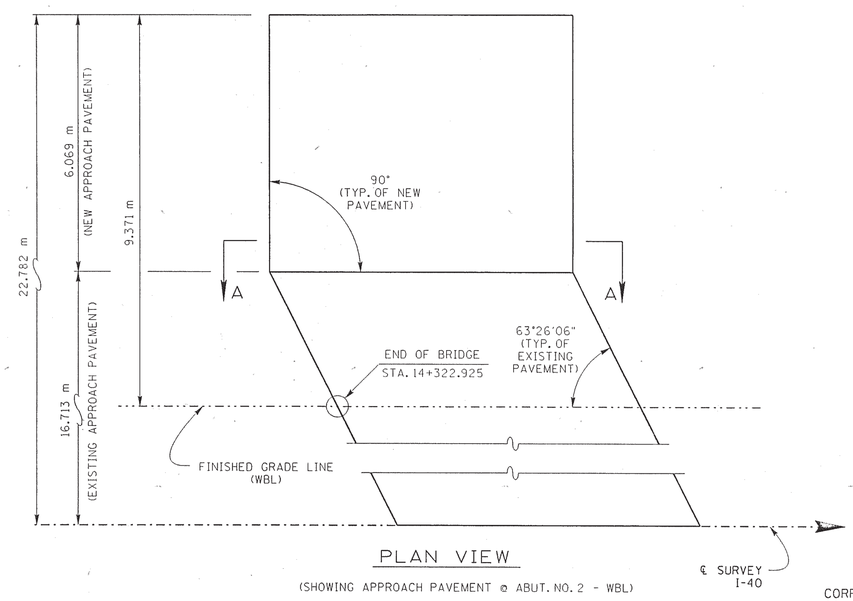
NO.	DATE	BY	BRIEF DESCRIPTION



SECTION "B-B"

(LOOKING FORWARD ON SURVEY)

HOLES ARE TO BE DRILLED INTO THE EXISTING CONCRETE APPROACH SUCH THAT THE A25__ BARS CAN BE PLACED. HOLES SHALL BE DRILLED 12.7 mm IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR IS ROTATED (NOT DRIVEN) TO IT'S SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY TDOT MATERIALS AND TESTS.



PLAN VIEW

(SHOWING APPROACH PAVEMENT @ ABUT. NO. 2 - WBL)

HAROLD M. BROOKS JR. REGISTERED ENGINEER STATE OF TENNESSEE
Harold M. Brooks Jr. 3/18/98

DIVISION OF HIGHWAYS METRIC ENGINEERING

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 1
APPROACH PAVEMENT DETAILS
WIDENING OF I-40 (WBL)
OVER
C.S.X. RAILROAD
STA. 14+301.416
DAVIDSON COUNTY
1998

DESIGNED BY	JOE PRINCE	DATE	09/97
DRAWN BY	DIANE BUSH	DATE	01/98
SUPERVISED BY	RLH / JHP	DATE	09/97
CHECKED BY	JOE PRINCE	DATE	02/98

CORRECT Edward A. Wasserman
ENGINEER OF STRUCTURES

M-359-93

/pr/steyer/steven/mis058m.dgn
Sat Feb 28 15:19:58 1998

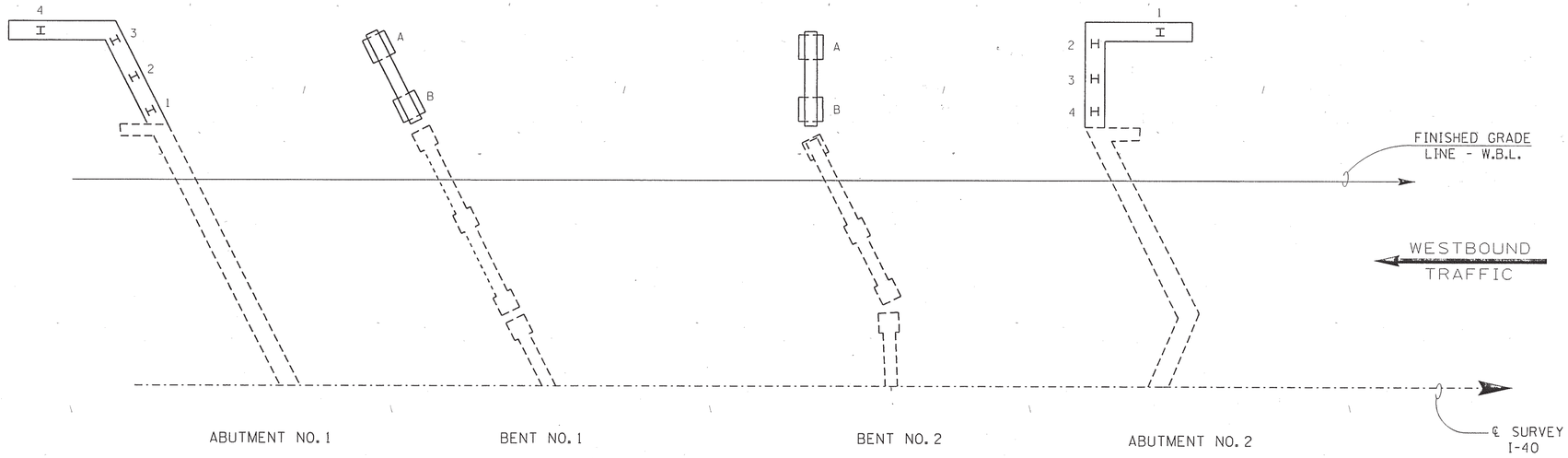
FFD094M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



PLAN

NOTE TO CONTRACTOR AND CONSTRUCTION OFFICE:

THE BLANKS ON THIS SHEET ARE TO BE FILLED IN BY THE CONSTRUCTION OFFICE AND/OR FIELD ENGINEER GIVING AS BUILT CONDITIONS. AFTER COMPLETION IT IS TO BE SENT TO THE DIVISION OF STRUCTURES TO BECOME PART OF FINAL BRIDGE DOCUMENTS.

TABLE OF PILE DATA

		1	2	3	4
ABUTMENT NO. 1	PILE CUT-OFF ELEVATION				
	PILE TIP ELEVATION				
	IN PLACE PILE LENGTH				
ABUTMENT NO. 2	PILE CUT-OFF ELEVATION				
	PILE TIP ELEVATION				
	IN PLACE PILE LENGTH				

TABLE OF FOOTING DATA

	BENT NO. 1		BENT NO. 2	
	A	B	A	B
TOP OF FOOTING ELEV.				
BOTTOM OF FOOTING ELEV.				

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 3/26/98

DIVISION OF STRUCTURES METRIC

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FINAL FOUNDATION DATA
WIDENING OF INTERSTATE 40
OVER
C.S.X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

DESIGNED BY JOE PRINCE DATE 9-97
DRAWN BY M. DYE DATE 2-98
SUPERVISED BY R.L.H. / H.M.B. DATE 2-98
CHECKED BY JOE PRINCE DATE 2-98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-94

BOSO90M.DGN

BILL OF STEEL

SUPERSTRUCTURE EPOXY-COATED

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (mm) A	B	C	D	LENGTH (m)
A1600E	SLAB	16	768					7.175
SER.								
A1601E	SLAB	16	2	LENGTH VARIES FROM 6.870 TO 1.665 IN INC. OF .306 (18 BARS)				76.825
A1603E	SLAB	16	60					18.300
SER.								
A1604E	SLAB	16	1	LENGTH VARIES FROM 9.500 TO 5.900 IN INC. OF .189 (20 BARS)				154.000
A1900E	SLAB	19	19					9.750
A1901E	SLAB	19	106					13.600
SER.								
A1902E	SLAB	16	1	LENGTH VARIES FROM 15.900 TO 12.300 IN INC. OF .200 (19 BARS)				267.900
A1903E	SLAB	19	19					12.600
B1371E	SLAB/PARAPET	13	410	.675				0.875
H1600E	SLAB	16	51	.505	.100			0.700
LA1600E	SLAB	16	22	.915	.305	.280	.175	2.600

ABUTMENT NO. 1

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (mm) A	B	C	D	LENGTH (m)
A1340	WINGWALL	13	5					4.275
A1341	WINGWALL	13	14					1.200
A1342	ROADWAY BRACKET	13	1					7.300
A1640	BEAM	16	2					7.075
A1641	BEAM WING	16	2					4.225
A1940	WINGWALL	19	14					1.200
A2240	BEAM	22	4					7.075
A2241	BEAM WING	22	4					4.225
A2540	EXISTING ABUT.	25	7					.625
B1940	WINGWALL	19	5	4.445				4.650
H1940	BEAM WING	19	14	.350	1.100			2.550
L1640	BEAM WING	16	12	.815	.305	.660		3.250

ABUTMENT NO. 1 EPOXY COATED

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (mm) A	B	C	D	LENGTH (m)
A1370E	WINGWALL/PARAPET	13	8					1.075
A1941E	ENDWALL	19	48					1.200
A1942E	BEAM	19	4					1.025
A1943E	ENDWALL	19	8					7.275
A1944E	ENDWALL	19	2					8.025
A2240E	BEAM	22	6					7.075
A2241E	BEAM WING	22	6					4.225
B1370E	WINGWALL/PARAPET	13	24	.675				0.875
D1940E	ENDWALL	19	4	1.525				1.925
F1940E	ROADWAY BRACKET	19	20	.330	.380	.330	.380	1.200
H1340E	BEAM/RISER BLOCKS	13	6	.475	.475			1.425
H1640E	ROADWAY BRACKET	16	22	.510	.155			0.825
H1941E	BEAM	19	21	.200	1.075			2.350
L1640E	BEAM	16	21	.815	.305	.660		3.250

ABUTMENT NO. 2

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (mm) A	B	C	D	LENGTH (m)
A1340	WINGWALL	13	5					4.275
A1343	WINGWALL	13	13					1.250
A1344	ROADWAY BRACKET	13	1					5.850
A1642	BEAM	16	2					6.300
A1643	WING BEAM	16	2					4.850
A1941	BEAM	19	4					1.025
A1945	WINGWALL	19	13					1.250
A1946	ENDWALL	19	7					6.225
A2242	BEAM	22	10					6.300
A2243	WING BEAM	22	10					4.850
A2540	EXISTING ABUT.	25	7					.625
B1941	WINGWALL	19	5	4.270				4.475
D1940	ENDWALL	19	4	1.525				1.925
H1640	ROADWAY BRACKET	16	17	.510	.155			0.825
H1942	BEAM	19	18	.200	1.075			2.350
H1943	WING BEAM	19	13	.350	1.100			2.550
L1640	BEAM	16	33	.815	.305	.660		3.250

ABUTMENT NO. 2 EPOXY COATED

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (mm) A	B	C	D	LENGTH (m)
A1370E	WINGWALL/PARAPET	13	8					1.075
A1945E	ENDWALL	19	42					1.250
A1946E	ENDWALL	19	1					6.225
A1947E	ENDWALL	19	2					7.450
B1370E	WINGWALL/PARAPET	13	24	.675				0.875
F1940E	ROADWAY BRACKET	19	18	.330	.380	.330	.380	1.200

BENT NO. 1

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (mm) A	B	C	D	LENGTH (m)
A1650	CAP BEAM	16	2					5.650
A2550	COLUMNS	25	56					8.900
A2950	CAP BEAM	29	6					5.650
C2550	FOOTING	25	56	2.000				2.400
D1950	FOOTING	19	16	1.985				2.550
D1951	FOOTING	19	18	1.675				2.225
H2950	CAP BEAM	29	6	5.655	.610			6.875
L1350	COLUMNS	13	54	.740	.305	.740		3.275
L1351	CAP BEAM	13	22	.600	.305	.815		3.150

BENT NO. 2

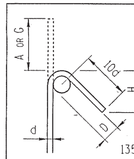
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (mm) A	B	C	D	LENGTH (m)
A1651	CAP BEAM	16	2					5.150
A2551	COLUMNS	25	56					8.925
A2951	CAP BEAM	29	6					5.150
C2550	FOOTING	25	56	2.000				2.400
D1950	FOOTING	19	16	1.985				2.550
D1951	FOOTING	19	18	1.675				2.225
H2951	CAP BEAM	29	6	5.140	.610			6.350
L1350	COLUMNS	13	60	.740	.305	.740		3.275
L1351	CAP BEAM	13	18	.600	.305	.815		3.150

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

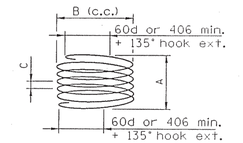
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

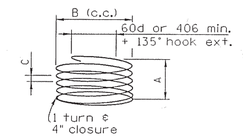


BAR SIZE	D (mm)	135° HOOK HOOK A OR G	135° HOOK H APPROX.
#13	50	165	114
#16	63	203	140
#19	114	260	165
#22	133	311	184
#25	152	362	229

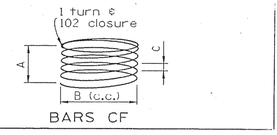
135° SEISMIC STIRRUP/TIE HOOK DIMENSIONS (ALL GRADES)



BARS M



BARS TB



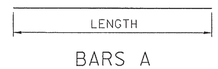
BARS CF

REINFORCING STEEL CODE

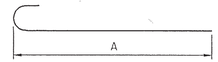
TYPE	SIZE	SERIES
A	16	06

NOTE: DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

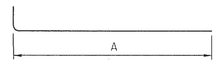
NOTE: THE SUFFIX E FOR BARS SO MARKED DENOTES EPOXY COATED REINFORCEMENT.



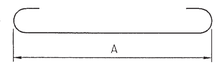
BARS A



BARS B



BARS C



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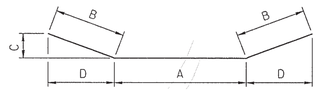

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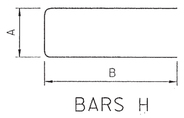

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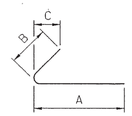

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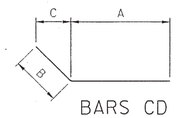

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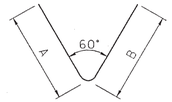

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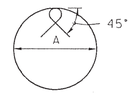

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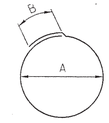

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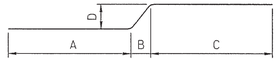

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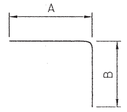
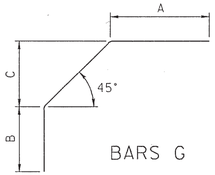


BARS R



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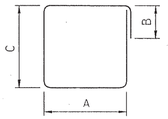

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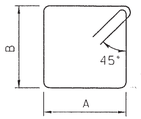

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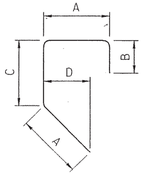

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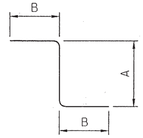

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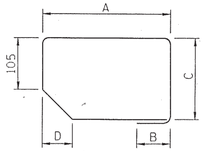


BARS LA

NOTE: ALL UNITS ARE SHOWN IN METERS. UNLESS OTHERWISE NOTED.

BRIDGE NO. 1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

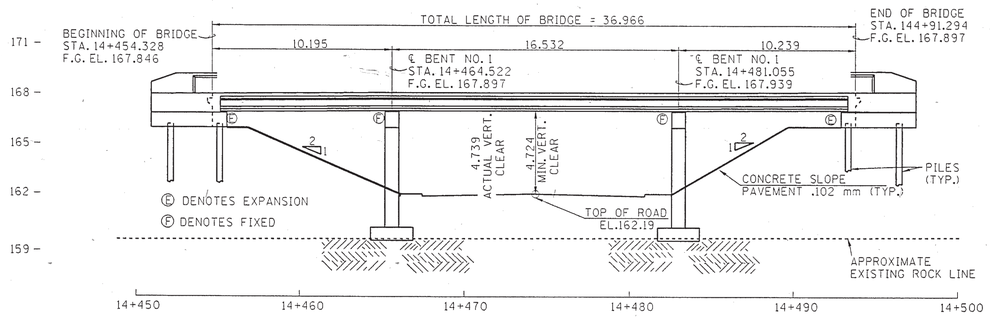
BILL OF STEEL
WIDENING OF INTERSTATE 40
(WESTBOUND LANE)
OVER C. S. X. RAILROAD
STATION 14+301.416
DAVIDSON COUNTY
1998

DESIGNED BY JOE PRINCE DATE 1-98
DRAWN BY STEVEN STEELE DATE 1-98
SUPERVISED BY R.L.H. & H.M.B. DATE 1-98
CHECKED BY DATE

CORRECT Edward P Wasserman
ENGINEER OF STRUCTURES

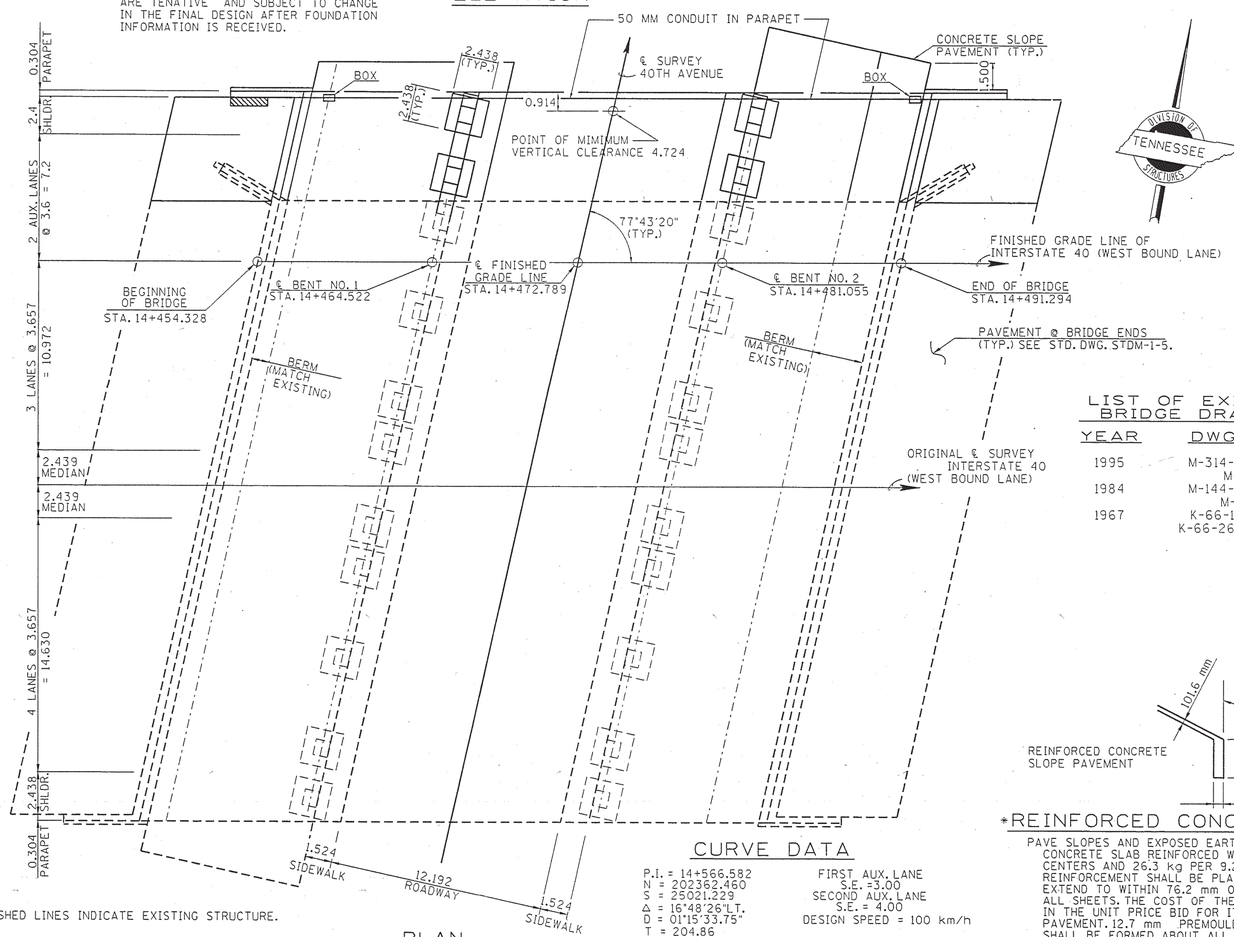
M-359-95

LAY094M.DGN



ELEVATION

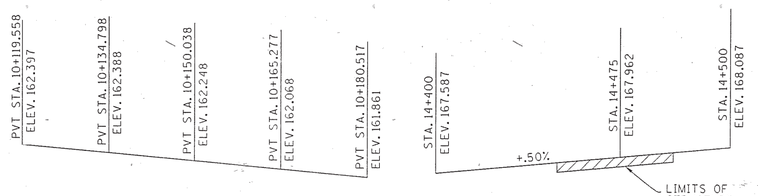
NOTE: FOOTING DIMENSIONS AND ELEVATIONS ARE TENATIVE AND SUBJECT TO CHANGE IN THE FINAL DESIGN AFTER FOUNDATION INFORMATION IS RECEIVED.



NOTE: DASHED LINES INDICATE EXISTING STRUCTURE.

PLAN

DESIGNED BY L. PERRY DATE 05-97
DRAWN BY FRANK F. FROST DATE 05-97
SUPERVISED BY T. TOLLEY DATE 05-97
CHECKED BY DATE



FINISHED GRADE SKETCH 40TH AVENUE NORTH

(BASED ON ℄ SURVEY 40TH AVENUE NORTH)

FINISHED GRADE SKETCH I-40

(BASED ON ℄ SURVEY I-40)

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

HYDRAULIC DATA

DRAINAGE AREA = 115 MI.²
DESIGN DISCHARGE (6 YR.) = 11,750 CFS
WATER AREA PROVIDED BELOW EL. 384.30 = 1,828 FT²
6 YR. VELOCITY = 6.39 FPS
6 YR. BRIDGE BACKWATER = 0 FT. @ EL. 385.70
ROADWAY OVERTOPPING EL. = 384.90
100 YR. DISCHARGE 24,780 @ EL. 389.12

LIST OF DRAWINGS

	DWG. NO.	LAST REV. DATE
LAYOUT OF BRIDGE	M-359-96	
GENERAL NOTES	M-359-97	
ESTIMATED QUANTITIES	M-359-97A	
FOUNDATION DATA	M-359-98	
SUPERSTRUCTURE	M-359-99	
SUPERSTRUCTURE DETAILS	M-359-100	
PRESTRESSED I-BEAM (SPANS NO.1 AND 3)	M-359-101	
PRESTRESSED I-BEAM (SPANS NO. 2)	M-359-102	
ABUTMENT NO. 1	M-359-103	
ABUTMENT NO. 1 DETAILS	M-359-104	
ABUTMENT NO. 2	M-359-105	
ABUTMENT NO. 2 DETAILS	M-359-106	
BENT NO. 1 AND 2	M-359-107	
BENT NO. 1 AND 2 DETAILS	M-359-108	
APPROACH PAVEMENT MODIFICATIONS	M-359-109	
FINAL FOUNDATION DATA	M-359-110	
BILL OF STEEL	M-359-111	

LIST OF STANDARD DRAWINGS

	DWG. NO.	LAST REV. DATE
BRIDGE RAILING CONCRETE PARAPET	STDM-1-1	04-28-97
PAVEMENT AT BRIDGE ENDS	STDM-1-5	04-28-97
BRIDGE END DRAIN W/PABE	STDM-1-6	04-28-97
BRIDGE END DRAIN W/PABE	STDM-1-7	04-28-97
BRIDGE END DRAIN 610 X 2620 W/PABE	STDM-1-8	06-10-96
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STDM-4-1	04-28-97
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS DESIGN CRITERIA	STDM-4-2	06-10-96
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STDM-4-3	06-10-96
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS CONSTRUCTION DETAILS	STDM-4-4	06-10-96
STANDARD PILE DETAILS	STDM-5-1	06-10-96
STANDARD PILE DETAILS	STDM-5-2	06-10-96
STANDARD SEISMIC DETAILS	STDM-6-1	06-10-96
LIGHT STANDARD SUPPORT DETAILS	STDM-8-2	06-10-96
REINF. BAR SUPPORT DETAILS FOR CONC. SLABS	STDM-9-1	06-10-96
MISCELLANEOUS ABUTMENT & DRAINAGE DETAILS	STDM-10-1	06-10-96
STD. DETAILS AND INT. DIAPH. DETAILS FOR I-BEAMS	STDM-14-2	06-10-96
SLOPE PROTECTION	RDM-SA-1	05-27-96

LIST OF EXISTING BRIDGE DRAWINGS

YEAR	DWG. NO.
1995	M-314-71 THRU M-314-83
1984	M-144-91 THRU M-144-100
1967	K-66-19 THRU K-66-26 & K-38-154

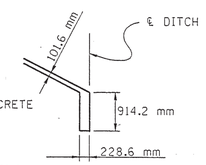
LIST OF SPECIAL PROVISIONS

	PROV. NO.	LAST REV. DATE
APPROVAL OF SHOP DRAWINGS	105A	3-06-95

CURVE DATA

P.I. = 14+566.582
N = 202362.460
S = 25021.229
Δ = 16°48'26"LT.
D = 01°15'33.75"
T = 204.86
L = 406.78
R = 1386
E = 15.05
L.C. = 405.33

FIRST AUX. LANE
S.E. =3.00
SECOND AUX. LANE
S.E. = 4.00
DESIGN SPEED = 100 km/h



*REINFORCED CONCRETE SLOPE PAVEMENT

PAVE SLOPES AND EXPOSED EARTH UNDER BRIDGES WITH 101.6 mm THICK CEMENT CONCRETE SLAB REINFORCED WITH 5.7 mm DIAMETER WIRE FABRIC @ 152.4 mm CENTERS AND 26.3 kg PER 9.29 meters2. THE WIRE FABRIC REINFORCEMENT SHALL BE PLACED AT ONE-HALF THE DEPTH OF THE SLAB AND EXTEND TO WITHIN 76.2 mm OF ITS EDGE WITH A 304.8 mm LAP REQUIRED ON ALL SHEETS. THE COST OF THE WIRE FABRIC REINFORCEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 709M-04, REINFORCED CONCRETE SLOPE PAVEMENT. 12.7 mm PREMOULDED EXPANSION JOINTS WITHOUT LOAD TRANSFERS SHALL BE FORMED ABOUT ALL STRUCTURES AND FEATURES PROJECTING THROUGH, IN OR AGAINST THE SLAB. THE SLAB SHALL BE GROOVED PARALLEL WITH AND AT RIGHT ANGLES TO THE UNDER ROADWAY CENTER LINE AT 1.829 m CENTERS. DEPTH OF GROOVE TO BE NOT LESS THAN 25.4 mm SEE STD. DWG. RDM-SA-1 FOR LIMITS OF SLOPE PROTECTION.

HAROLD M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE 2/26/98

NOTE: ALL DIMENSIONS SHOWN IN METERS UNLESS OTHERWISE NOTED.

2018 ADT = 173,200
ROADWAY WITH STDM-1-1 ℄ CONCRETE MEDIAN BARRIER
DESIGN SPEED = 100 km/h

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
LAYOUT
WIDENING OF INTERSTATE 40 (WEST BOUND LANE) OVER 40TH AVENUE
BRIDGE I.D. NO. 19I00400041
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY

CORRECT Edward P. Wasserman 1998
ENGINEER OF STRUCTURES

M-359-96

TEMPORARY BARRIER RAIL = 52 METERS

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Jan 28 1998
11:02

GN092M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-140-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (MARCH 1, 1995 EDITION).

LOADING: MS18-44 WITH ALTERNATE MILITARY.

DESIGN SPECIFICATIONS: AASHTO 1996 EDITION WITH ADDENDA INCLUDING THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES. (SEISMIC PERFORMANCE CATEGORY 'A' WITH ACCELERATION COEEFFICIENT 0.075).

CONCRETE: TO BE CLASS 'A' (CAST IN PLACE) f'c = 21 MPa EXCEPT AS NOTED OTHERWISE.

CLASS 'D' CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE "C" IN ARTICLE 604.23 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL. TEMPORARY ERECTION DIAPHRAGMS MUST BE USED AT THE ENDS OF PRECAST CONCRETE GIRDERS WHERE END DIAPHRAGMS, SUPPORT DIAPHRAGMS, OR ABUTMENT BACKWALLS ARE TO BE POURED CONCURRENTLY WITH THE DECK AND SHALL BE PROVIDED ELSEWHERE IN ACCORDANCE WITH THE SPECIFICATIONS TO PREVENT GIRDER ROTATION. SEE STANDARD DRAWINGS STDM-4-1 THRU 4, STDM-14-3 AND ARTICLE 604.05 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: TO BE ASTM A615M GRADE 400 MPa UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

SPECIAL NOTE - FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 2.000 m DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

PILES: TO BE HP250 × 62 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 490 KN FOR THE ABUTMENTS.

NOTE: ALL FILL SHALL BE IN PLACE PRIOR TO EXCAVATING FOR BENT FOOTINGS. AFTER CONSTRUCTING THE BENT, EXTREME CARE SHALL BE TAKEN WHEN BACKFILLING SO AS NOT TO DAMAGE OR MISALIGN THE BENT.

NOTE: THE FILLS AT THE END OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STDM-1-1.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A.

VALUE ENGINEERING ALTERNATE BRIDGE DESIGN CRITERIA: ALTERNATE BRIDGE DESIGN PROPOSALS MAY NOT DIMINISH THE FUNCTIONAL OR STRUCTURAL EQUIVALENCY OF THE BRIDGE AND MUST MEET OR EXCEED BOTH THE SERVICE LEVEL AND ULTIMATE CAPACITIES OF THE CONTRACT PLANS STRUCTURE. ADDITIONALLY, FOR GRADE SEPARATIONS, THE HORIZONTAL CLEARANCES MAY NOT BE REDUCED, NOR MAY THE VERTICAL CLEARANCES BE LESS THAN THE MINIMUM ACCEPTABLE FOR THE TYPE OF FACILITY CROSSED.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. A CLASS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITEM 604M04.01 AND 604M04.02.

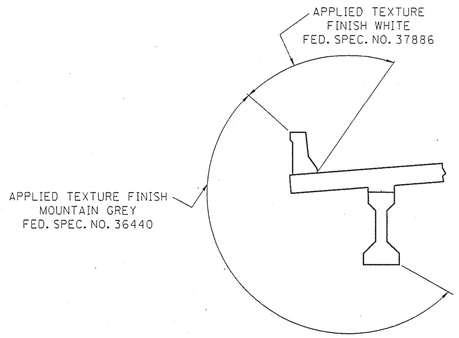
NOTE: THE CONTRACTOR SHALL SAW CUT 25 mm DEEP INTO THE SLAB BEFORE REMOVING CONCRETE. ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE AND BE SPLICED WITH THE NEW REINFORCING. THE CONTRACTOR SHALL NOT USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILAR HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM ALLOWABLE HAMMER SIZE IS THE 27 kg CLASS.

NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDERS.

REQUIREMENTS AND RESTRICTIONS OF PHASE CONSTRUCTION:

1. THE LOCATION OF LONGITUDINAL CONSTRUCTION JOINTS SHALL NOT BE CHANGED TO ACCOMMODATE REMAIN IN PLACE DECK FORMS.
2. NO SHEET PILES OR BEARING PILES MAY BE DRIVEN FROM THE EXISTING OR PROPOSED STRUCTURE.
3. 3-3.657 TRAFFIC LANES SHALL BE MAINTAINED AT ALL TIMES.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED 14 mm IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR ROTATED (NOT DRIVEN) TO ITS SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED 7 mm IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.



TYPICAL AT
PROPOSED CANTILEVER

APPLIED TEXTURE FINISH SKETCH

NOTE: IN ADDITION TO THE SURFACES SHOWN IN THE APPLIED TEXTURE FINISH SKETCH ALL EXPOSED SURFACES OF THE PROPOSED WINGWALLS, ABUTMENT BEAMS, BENTS AND EXTERIOR PORTIONS OF ENDWALLS ARE TO RECEIVE AN APPLIED TEXTURE FINISH (MOUNTAIN GREY, FED. SPEC. NO. 36440). COST TO BE INCLUDED UNDER ITEM NO. 604M04.01, APPLIED TEXTURE FINISH (NEW STRUCTURES).

ALSO, ALL EXPOSED SURFACES OF THE EXISTING BENTS AND ABUTMENT BEAMS, CONSTRUCTED IN 1984 AND 1967, ARE TO RECEIVE AN APPLIED TEXTURE FINISH (MOUNTAIN GRAY, FED. SPEC. 36440). COST TO BE INCLUDED UNDER ITEM NO. 604M04.02, APPLIED TEXTURE FINISH (EXISTING STRUCTURES).

HARRIE M. BROOKS, JR. — REGISTERED ENGINEER — 13271 — STATE OF TENNESSEE
Harrie M. Brooks Jr. 30 Oct 98

DIVISION OF STRUCTURES — METRIC

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
GENERAL NOTES
WIDENING OF I-40
OVER
40TH AVENUE
STATION 14+472.789
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-97

DESIGNED BY LAWRENCE PERRY DATE 05-96
DRAWN BY DIANE BUSH DATE 12-97
SUPERVISED BY RLH / JHP DATE 05-96
CHECKED BY LAWRENCE PERRY DATE 02-98

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14-MAR-1998
14:27

GN092M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-140-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 1	BENT NO. 1	BENT NO. 2	ABUT. NO. 2
(1)	202M04.02	REMOVAL OF STRUCTURES (EXIST. BR. NO. 19100400041)	L.S.	1					
(2)	204M02.01	DRY EXCAVATION (BRIDGES)	M3	116		20	37	36	23
	204M04.01	ROCK EXCAVATION (BRIDGES)	M3	10			5	5	
	204M05	ROCK DRILLING (BRIDGES)	M	8			4	4	
(7)	303M01.20	GRANULAR BACKFILL (BRIDGES)	TONNE	7		3			4
	604M02.03	EPOXY COATED REINFORCING STEEL	KG	11290	10627	315			327
(6)	604M03.01	CLASS 'A' CONCRETE (BRIDGES)	M3	71		14	21	21	15
	604M03.02	STEEL BAR REINFORCEMENT (BRIDGES)	KG	7280	273	1059	2438	2424	1086
(8)	604M03.04	PAVEMENT AT BRIDGE ENDS	M2	89	89				
	604M03.09	CLASS 'D' CONCRETE (BRIDGE DECK)	M3	66	66				
	604M04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	M2	261	160	11	39	39	12
	604M04.02	APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	M2	370		27	160	156	27
	604M05.31	BRIDGE DECK GROOVING (MECHANICAL)	M2	384					
(9)	604M10.50	BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB)	M2	10					
	606M02.03	STEEL PILES (250MM)	M	54		27			27
(4)	615M01.02	PRESTRESSED CONCRETE I-BEAM (TYPE II)	M	108					
	620M03.10	CONCRETE PARAPET (STDM-1-1)	M	44					
	709M04	REINFORCED CONCRETE SLOPE PAVEMENT	M3	67					
(5)	710M09.01	150MM PERF. PIPE WITH VERTICAL DRAIN SYSTEM	M	21		10			11
	710M09.02	150MM PIPE UNDERDRAIN	M	8		4			4
(10)	714M01.01	STRUCTURAL LIGHTING (BRIDGE NO. 2)	L.S.	1					

(1) NOTE: THE COST OF REMOVING THE EXTERIOR PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT, AND THE BRIDGERAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202M04.02.

(2) EXCAVATION BASED ON FINAL PROFILE AT THE ABUTMENTS AND EXISTING GROUND AT BENTS.

(3) NOTE: THE COST OF BITUMINOUS-FIBERBOARD AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS.

(4) NOTE: COST OF ELASTOMERIC PADS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR THE PRESTRESSED BEAM.

(5) NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.

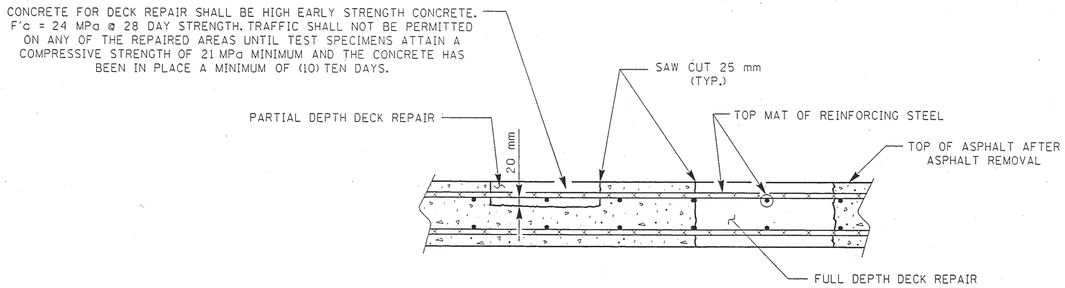
(6) NOTE: THE COST OF ALL MATERIALS AND LABOR NECESSARY FOR THE INSTALLATION OF 12 ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604M03.01, CLASS 'A' CONCRETE (BRIDGES).

(7) NOTE: GRANULAR BACKFILL SHALL BE CLASS 'A' GRADING 'D' MATERIAL. SEE STANDARD DRAWING STDM-10-1.

(8) NOTE: PRIOR TO CONSTRUCTION OF PAVEMENT AT BRIDGE ENDS, THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL.

(9) NOTE: THE COST OF ALL LABOR, MATERIALS, EQUIPMENT AND MISCELLANEOUS ITEMS REQUIRED FOR PARTIAL DEPTH SLAB REPAIR ARE TO BE INCLUDED IN THE COST OF ITEM NO. 604M10.50.

(10) NOTE: THE COST OF ALL LABOR, MATERIALS, EQUIPMENT AND MISCELLANEOUS ITEMS REQUIRED FOR STRUCTURAL LIGHTING ARE TO BE INCLUDED IN THE COST OF ITEM NO. 714M01.01. THIS INCLUDES 38 m OF 50 mm PVC SCHEDULE 40 CONDUIT AND 2 JUNCTION BOXES IN PARAPET.



DETAIL SHOWING PARTIAL AND FULL DEPTH DECK REPAIR

REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF 20 mm BELOW THE TOP BAR OF THE TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE COMPLETELY CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE BRIDGE REPAIR OFFICE. DECK REPAIR WILL BE PAID FOR UNDER ITEM NO. 604M10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB) AND ITEM NO. 604M10.30, BRIDGE DECK REPAIR (FULL DEPTH OF SLAB). DURING PARTIAL DEPTH REPAIRS, SHOULD DETERIORATED CONCRETE BE ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB, THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604M10.30. POWER DRIVEN HAND TOOLS USED FOR THE REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL AND FULL DEPTH REPAIRS ARE SUBJECT TO THE FOLLOWING RESTRICTIONS:

1) (PARTIAL DEPTH REPAIRS) PNEUMATIC HAMMERS HEAVIER THAN THE NOMINAL 27 kg SHALL NOT BE USED .

2) (FULL DEPTH REPAIRS) PNEUMATIC HAMMERS HEAVIER THAN THE NOMINAL 41 kg CLASS SHALL NOT BE USED. ALSO, ALL DECK REPAIR OVER BEAMS WILL BE RESTRICTED TO 27 kg PNEUMATIC HAMMERS.

3) CHIPPING HAMMERS OF THE 7 kg CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.

NOTE: ITEM NO. 604M10.30 AND 604M10.50 SHALL BE BID WITH THE CONTINGENCY THAT THESE ITEMS MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER.

NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURE DURING FULL AND PARTIAL DEPTH DECK REPAIRS. THE CONCRETE IS ACCEPTABLE AS LONG AS ANY SPECIFIED PROJECTION OF THE EXISTING STEEL IS MAINTAINED. ALL DEVICES PROPOSED FOR CONCRETE DEMOLITION SHALL MEET THE APPROVAL OF THE ENGINEER.

HARDIE M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE

DIVISION OF METRIC STRUCTURES

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
ESTIMATED QUANTITIES
WIDENING OF I-40
OVER
40TH AVENUE
STATION 14+472.789
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-97A

DESIGNED BY LAWRENCE PERRY DATE 05-97
DRAWN BY DIANE BUSH DATE 12-97
SUPERVISED BY RLH / JHP DATE 05-97
CHECKED BY LAWRENCE PERRY DATE 02-98

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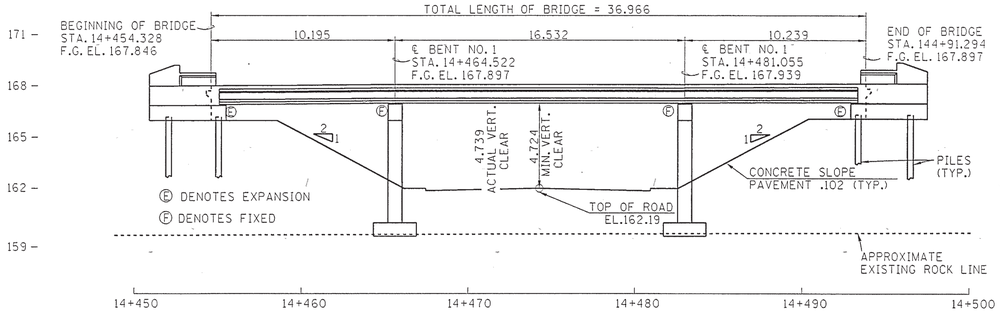
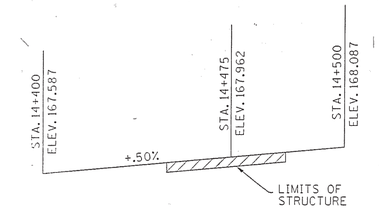


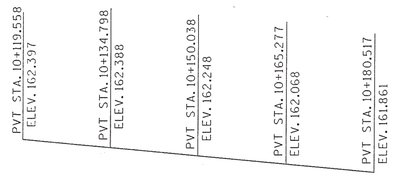
ELEVATION

NOTE: FOOTING DIMENSIONS AND ELEVATIONS ARE TENATIVE AND SUBJECT TO CHANGE IN THE FINAL DESIGN AFTER FOUNDATION INFORMATION IS RECEIVED.



FINISHED GRADE SKETCH I-40

(BASED ON ℄ SURVEY I-40)



FINISHED GRADE SKETCH
40TH AVENUE NORTH

(BASED ON ℄ SURVEY 40TH AVENUE NORTH)

CONST. NO. 19005-3139-44

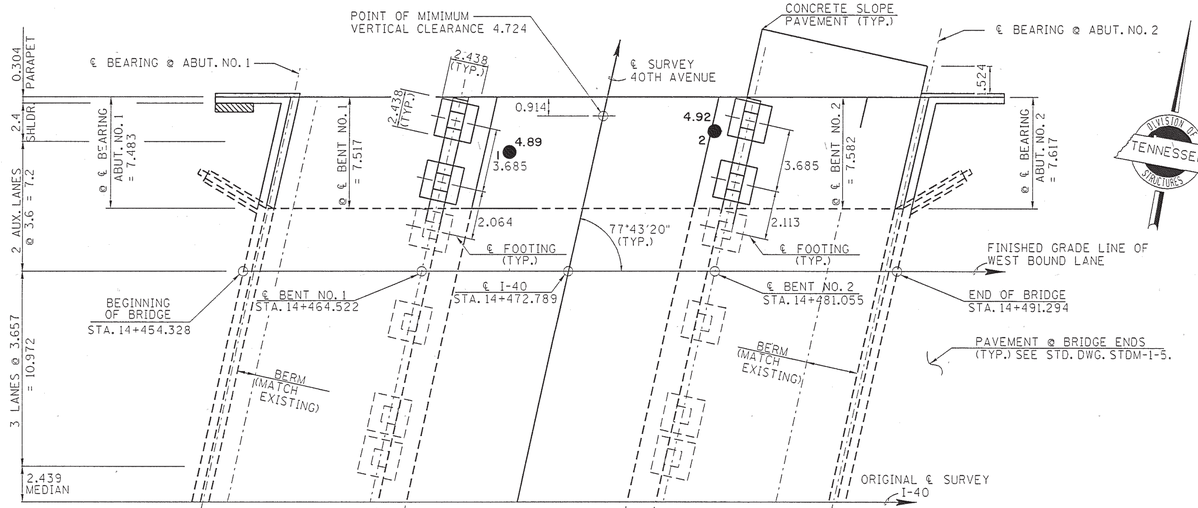
PROJECT NO.	YEAR	SHEET NO.
NH-140-4(68)205	1998	

REVISIONS

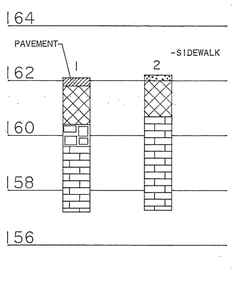
NO.	DATE	BY	BRIEF DESCRIPTION

CURVE DATA

I-40 WBL
P.I. STA. 14+566.582
N 202362.460
S 25021.229
Δ 16°48'26" LT
D 01°15'33.75"
T 204.86
L 406.78
R 1386.70
E 15.05
L.C. 405.33
FIRST AUX. LANE
Se 3.00 '/'
SECOND AUX. LANE
Se 4.00 '/'
DESIGN SPEED = 100 Km/h



PLAN



— LEGEND —

- CLAY
- WEATHERED LIMESTONE
- LIMESTONE

HOLE NO. 1 — 4.89 — DEPTH DRILLED

2 — CORE

GROUND AND ROCK ELEVATIONS

1. G.162.1 / R.160.4

2. G.162.20 / R.160.68

NOTE: BORING DEPICTIONS SHOWN ON FOUNDATION DATA SHEET INDICATE GENERAL SOIL AND ROCK TYPES AT THE SPECIFIC BORING LOCATIONS.

TO ASSIST IN BID PREPARATION FOR FOUNDATION CONSTRUCTION, DETAILED ROCK AND SOIL DESCRIPTIONS AND, ON SOME PROJECTS, ROCK CORE SAMPLES ARE AVAILABLE FOR INSPECTION AT THE MATERIALS AND TESTS HEADQUARTERS AT 6601 CENTENNIAL BLVD., NASHVILLE, TN. (615) 350-4130.

NOTES: REQUIRED:

1) SUFFICIENT GROUND, ROCK AND CORING INFORMATION FOR BRIDGE FOUNDATION.

2) APPROXIMATE EXISTING GROUND AND ROCK LINE.

NOTE: THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

NOTE: ALL DIMENSIONS SHOWN IN METERS UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
FOUNDATION DATA
WIDENING OF I-40 ℄ 2
OVER
40TH AVENUE
BRIDGE I.D. NO. 19I00400041
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY

CORRECT Edward P. Wasserman 1998
ENGINEER OF STRUCTURES

M-359-98

DESIGNED BY L. PERRY DATE 05-96
DRAWN BY FRANK F. FROST DATE 11-97
SUPERVISED BY T. TOLLEY DATE 05-96
CHECKED BY DATE

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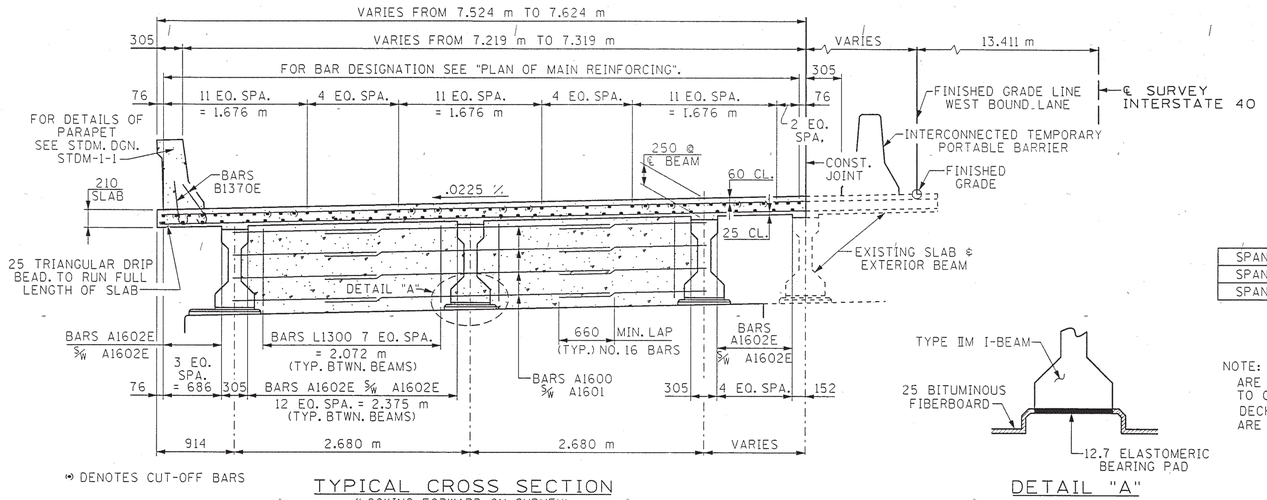
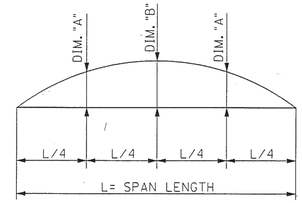


TYPICAL CROSS SECTION
(LOOKING FORWARD ON SURVEY)

DETAIL "A"

	DIM. "A"	DIM. "B"
SPAN 1	.0017	.0024
SPAN 2	.0118	.0166
SPAN 3	.0017	.0025



DEAD LOAD CORRECTION CURVE

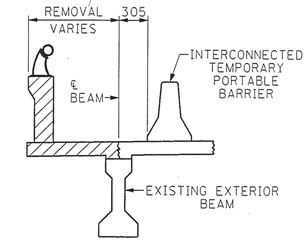
NOTE: THIS CURVE IS FOR DEAD LOAD SLAB AND ALL DEAD LOADS THAT ARE APPLIED AFTER THE SLAB IS IN PLACE AND SHOULD BE CORRECTED TO COMPENSATE FOR THE EFFECTS DUE TO VERTICAL CURVE. IF PRESTRESSED DECK PANELS ARE USED AND THE BEAMS ARE PROFILED AFTER THE PANELS ARE IN PLACE. REDUCE THE DEAD LOAD CORRECTION VALUES SHOWN BY 25%.

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

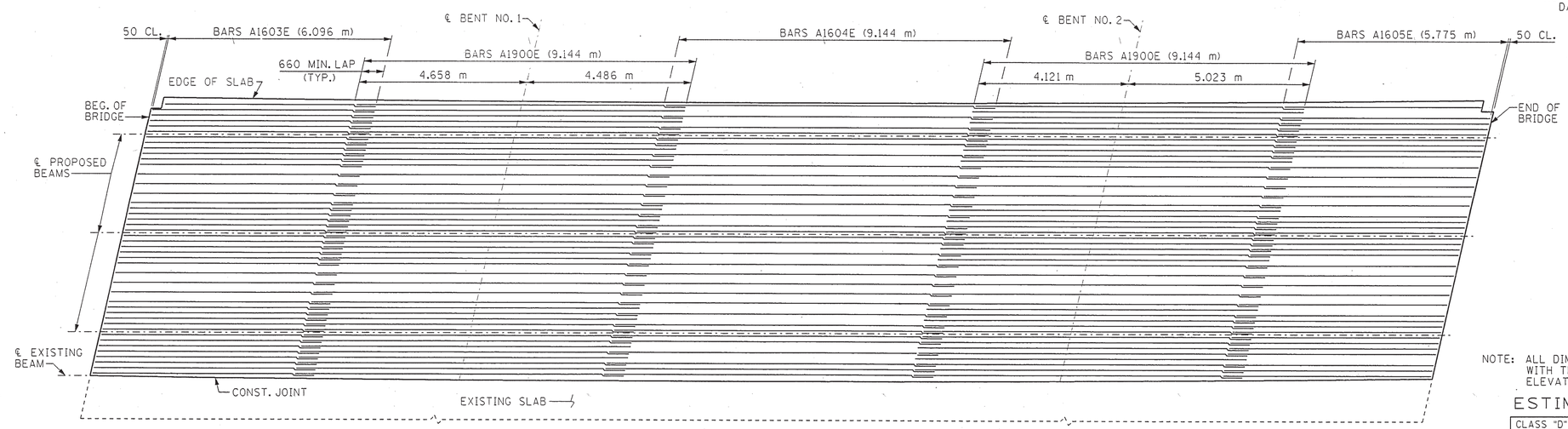
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



REMOVAL SKETCH
(LOOKING FORWARD ON SURVEY)

NOTE: CARE SHOULD BE TAKEN TO NOT DAMAGE EXSITING REINFORCING.

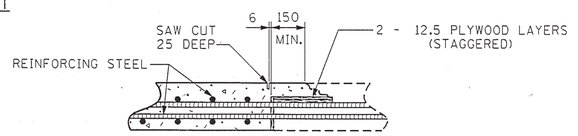


PLAN OF MAIN REINFORCMENT

NOTE: NO PORTION OF THE PARAPET SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.

NOTE: THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE BEAMS TO PREVENT DAMAGE DUE TO TWISTING OR OVERTURNING DURING ALL PHASES OF CONSTRUCTION. IT IS STRONGLY RECOMMENDED THAT THE TEMPORARY ERECTION DIAPHRAGMS BE INSTALLED AND THE PERMANENT INTERMEDIATE DIAPHRAGMS BE POURED AND CURED PRIOR TO PLACING ANY LOADS ON THE GIRDERS. HOWEVER, TEMPORARY ERECTION DIAPHRAGMS AND PERMANENT INTERMEDIATE DIAPHRAGMS MUST BE IN PLACE IN THE SPAN AT THE TIME THE THE SLAB IS POURED IN SAID SPAN.

NOTE: WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR PARAPET. THE PARAPET SHALL NOT BE POURED UNTIL THE SLAB IS POURED AND CURED. ALSO SEE DRAWING NO. STDM-1-1 & DWG. NO.



SLAB CONSTRUCTION JOINT DETAIL

DECK CONCRETE POURING SEQUENCE: SLAB CONSTRUCTION JOINTS MAY BE LOCATED AT THE CONTRACTOR'S OPTION SUBJECT TO THE FOLLOWING:
1) NO CONSTRUCTION JOINT MAY BE LOCATED CLOSER THAN 3.000 m OR FURTHER THAN 5.0 m FROM AN INTERIOR SUPPORT.
2) THE SLAB IN THE MIDDLE SECTION OF BOTH ADJACENT SPANS MUST BE POURED TO WITHIN AT LEAST 5.000 m OF THE INTERIOR SUPPORTS EITHER PRIOR TO OR CONCURRENTLY WITH THE SLAB OVER AN INTERIOR SUPPORT.

ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE "SLAB CONSTRUCTION JOINT DETAIL" SHOWN ABOVE.

DESIGNED BY L. PERRY DATE 12-97
DRAWN BY ANDREW L. CHESSER DATE 12-97
SUPERVISED BY RLH / JHP DATE 12-97
CHECKED BY L. PERRY DATE -98

DIVISION OF METRIC STRUCTURES

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

ESTIMATED QUANTITIES

CLASS "D" CONCRETE	STEEL BAR REINFORCEMENT	EPOXY COATED REINFORCING STEEL
m3	kg.	kg.
71	274	10,627

BRIDGE NO. 2
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
WIDENING OF I-40
OVER
40TH AVENUE
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-99

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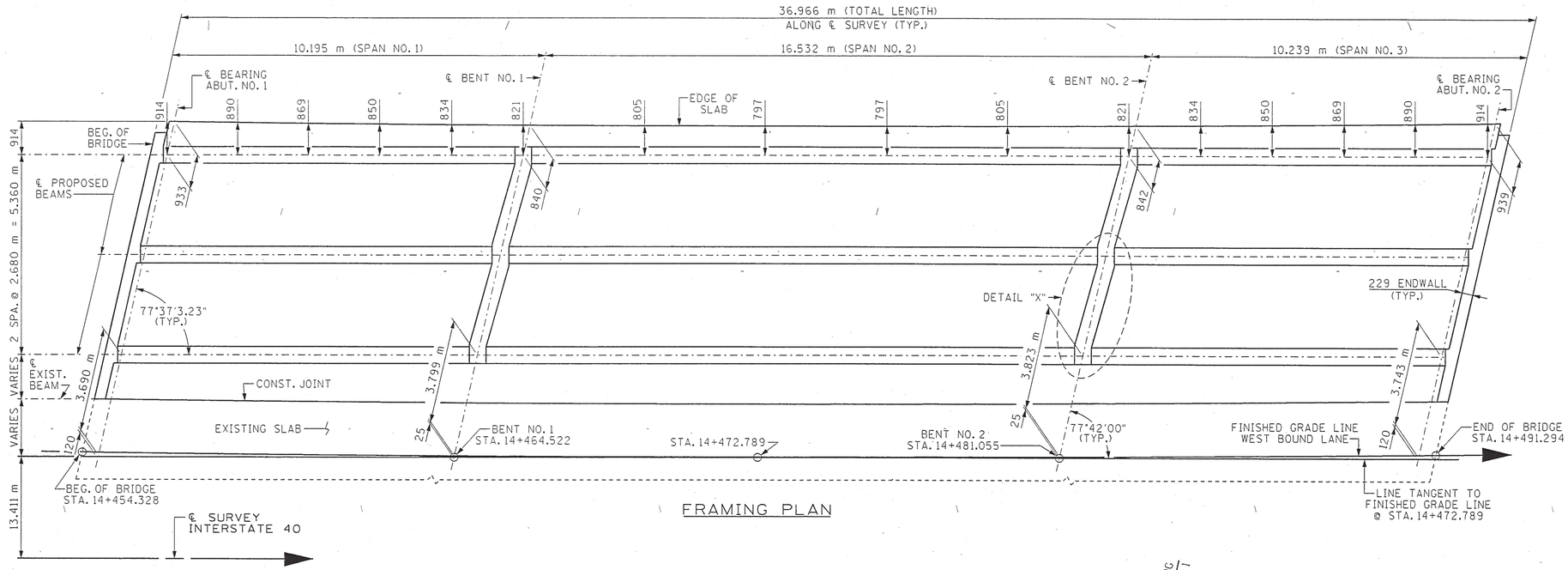
CONST. NO. 19005-3139-44

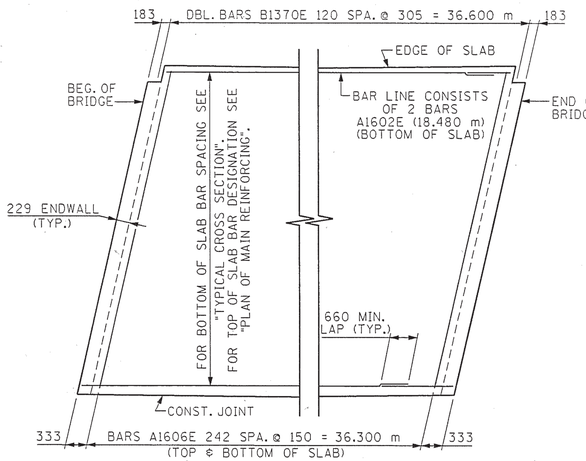
PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

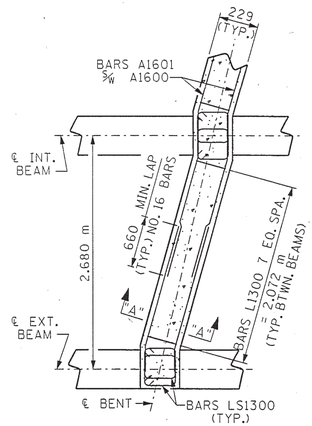
NO.	DATE	BY	BRIEF DESCRIPTION



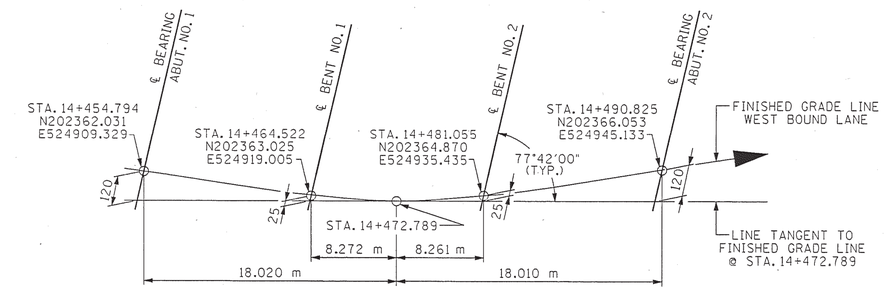
FRAMING PLAN



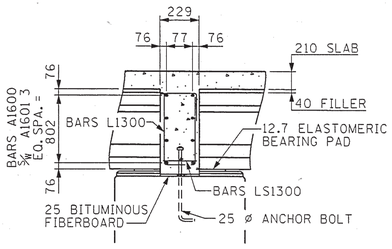
SLAB PLAN



DETAIL "X"



STAKE-OUT PLAN



SECTION "A-A"

NOTE: SUPPORT DIAPHRAGMS AT BENTS SHALL BE POURED CONCURRENTLY WITH THE DECK SLAB AND INCLUDED IN THE QUANTITIY FOR ITEM 604M03.09.

SPECIAL NOTE FOR ANCHOR BOLTS AT BENTS: ANCHOR BOLT ASSEMBLIES AT BENTS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING STDM-6-1.

DIVISION OF STRUCTURES METRIC

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
WIDENING OF I-40
OVER
40TH AVENUE
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 3/26/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-100

DESIGNED BY	L. PERRY	DATE	12-97
DRAWN BY	ANDREW L. CHESSER	DATE	12-97
SUPERVISED BY	RLH / JHP	DATE	12-97
CHECKED BY	L. PERRY	DATE	-98

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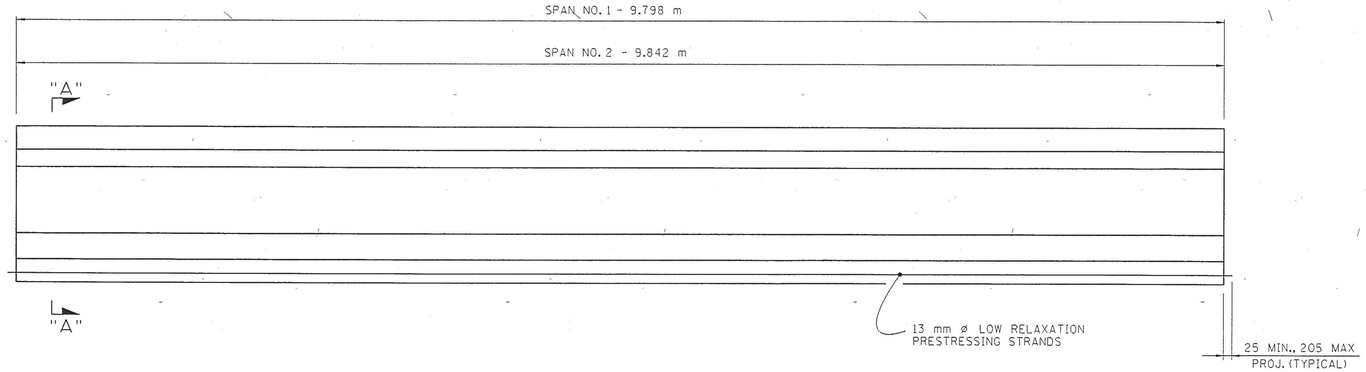
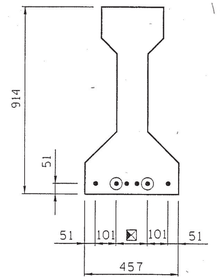


ELEVATION

(SHOWING PRESTRESSING STRANDS)



SECTION "A"-"A"

(SHOWING PRESTRESSING STRANDS)
(6 STRANDS)

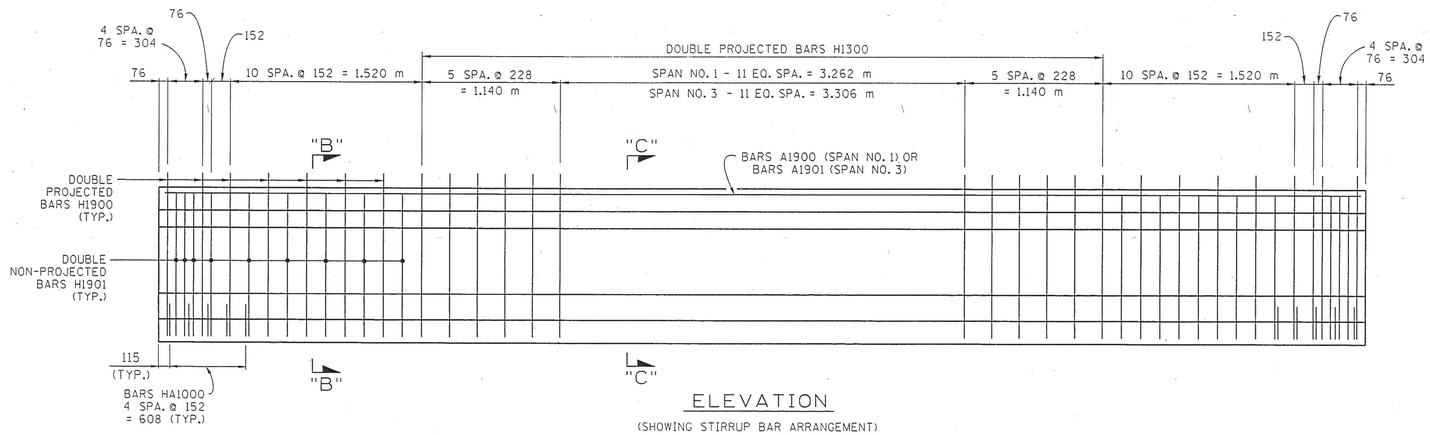
CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

⊙ DENOTES: BOND BREAK @ 914 mm FROM EACH END OF BEAM
⊠ DENOTES 3 EQ. SPA. @ 51 = 153



ELEVATION

(SHOWING STIRRUP BAR ARRANGEMENT)

NOTES:

NOTE: SEE STDM-14-2 FOR I-BEAM STANDARD DETAILS, NOTES, AND REINFORCING.

ALL BEAMS ARE AASHTO - PCI STANDARD IIM.

THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 35 MPa AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 28 MPa. SEE GENERAL NOTES FOR CONCRETE FINISHING NOTE.

PRESTRESSED BEAM DESIGN DATA (PER BEAM)

LIVE LOAD DISTRIBUTION FACTOR: 1.336 WHEELS

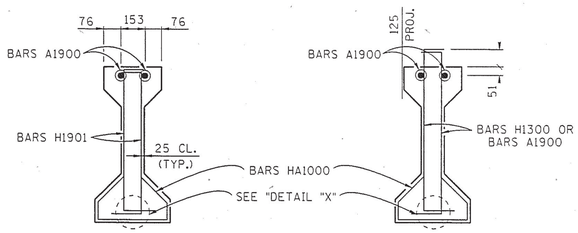
COMPOSITE DEAD LOAD: 6.016 kN/m

COMPOSITE SLAB LOAD f'c = 21 MPa

NOTE: DOWNWARD DEFLECTION UNDER TOTAL DL IS NOT ALLOWED.

ESTIMATED QUANTITIES - PER BEAM

	NO. BEAMS REQ.	PRESTRESSING STRANDS (LOW RELAXATION) KG	CLASS "A" CONCRETE M3	REINFORCING STEEL KG
SPAN NO. 1	3	46	2	334
SPAN NO. 3	3	46	2	335



SECTION "B"-"B"

(SHOWING NON PROJECTING BARS)

SECTION "C"-"C"

(SHOWING PROJECTING BARS)



DETAIL "X"

BILL OF STEEL PER BEAM

BAR	SIZE	NO. REQ'D	LENGTH
SPAN NO. 1			
A1600	16	6	1.675 m
A1900	19	2	9.700 m
C1600	16	12	2.050 m
H1300	13	44	1.325 m
H1900	19	28	1.325 m
H1901	19	36	1.125 m
HA1000	10	10	1.050 m
SPAN NO. 3			
A1600	16	6	1.675 m
A1901	19	2	9.750 m
C1600	16	12	2.050 m
H1300	13	44	1.325 m
H1900	19	28	1.325 m
H1901	19	36	1.125 m
HA1000	10	10	1.050 m

DESIGNED BY LAWRENCE PERRY DATE 05-97
DRAWN BY DIANE BUSH DATE 12-97
SUPERVISED BY RLH / JHP / TT DATE 05-97
CHECKED BY _____ DATE -98

DIVISION OF METRIC STRUCTURES

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

HARDIE M. BROOKS, JR. 1917 REGISTERED ENGINEER 1917 STATE OF TENNESSEE 3/6/98

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESTRESSED I-BEAM (SPANS NO. 1 AND 3) WIDENING OF I-40 OVER 40TH AVENUE STATION 14+472.789 LOG MILE 13.74 DAVIDSON COUNTY 1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-101

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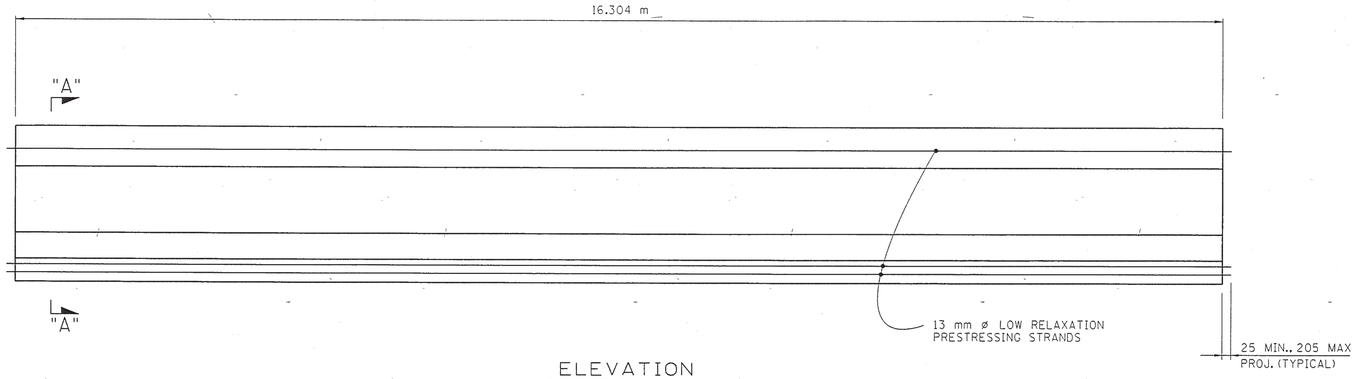
CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

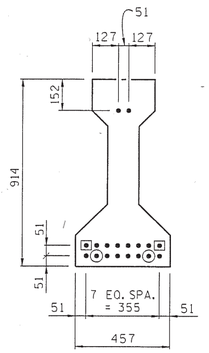
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION

(SHOWING PRESTRESSING STRANDS)



SECTION "A"-"A"

(SHOWING PRESTRESSING STRANDS) (18 STRANDS)

⊙ DENOTES BOND BREAK @ 3.658 m FROM EACH END OF BEAM

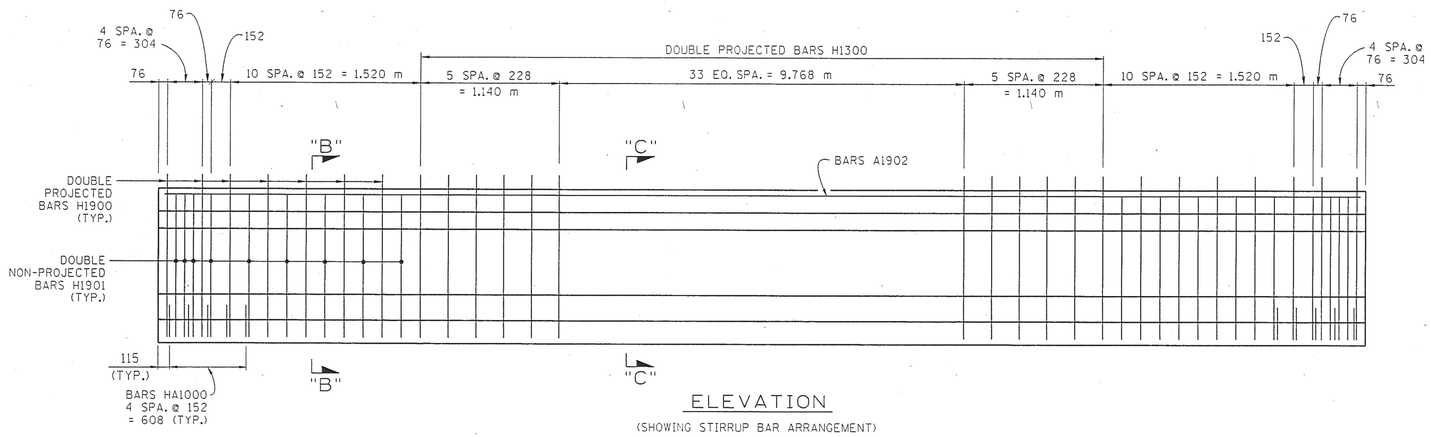
⊡ DENOTES BOND BREAK @ 2.438 m FROM EACH END OF BEAM

NOTES:

NOTE: SEE STDM-14-2 FOR I-BEAM STANDARD DETAILS, NOTES, AND REINFORCING.

ALL BEAMS ARE AASHTO - PCI STANDARD IIM.

THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 48 MPa AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 45 MPa. SEE GENERAL NOTES FOR CONCRETE FINISHING NOTE.



ELEVATION

(SHOWING STIRRUP BAR ARRANGEMENT)

PRESTRESSED BEAM DESIGN DATA (PER BEAM)

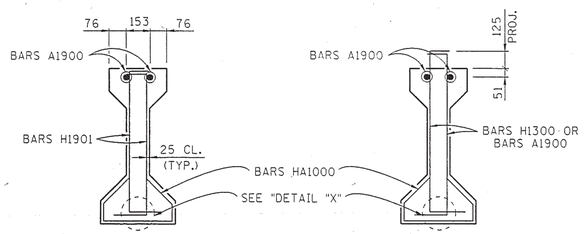
LIVE LOAD DISTRIBUTION FACTOR: 1.336 WHEELS

COMPOSITE DEAD LOAD: 6.016 kN/m

COMPOSITE SLAB LOAD f'c = 21 MPa

NOTE: DOWNWARD DEFLECTION UNDER TOTAL DL IS NOT ALLOWED.

ESTIMATED QUANTITIES - PER BEAM			
NO. BEAMS REQ.	PRESTRESSING STRANDS (LOW RELAXATION) KG	CLASS "A" CONCRETE M3	REINFORCING STEEL KG
3	230	4	421



SECTION "B"-"B"

(SHOWING NON PROJECTING BARS)

SECTION "C"-"C"

(SHOWING PROJECTING BARS)



DETAIL "X"

BILL OF STEEL PER BEAM			
BAR	SIZE	NO. REQ'D	LENGTH
A1600	16	6	1.675 m
A1902	19	2	16.200 m
C1600	16	12	2.050 m
H1300	13	88	1.325 m
H1900	19	28	1.325 m
H1901	19	36	1.125 m
HA1000	10	10	1.050 m

DIVISION OF METRIC STRUCTURES

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 3/26/98

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESTRESSED I-BEAM
(SPAN NO. 2)
WIDENING OF I-40
OVER
40TH AVENUE
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-102

DESIGNED BY LAWRENCE PERRY DATE 05-97
DRAWN BY DIANE BUSH DATE 12-97
SUPERVISED BY RLH / JHP / TT DATE 05-97
CHECKED BY DATE -98

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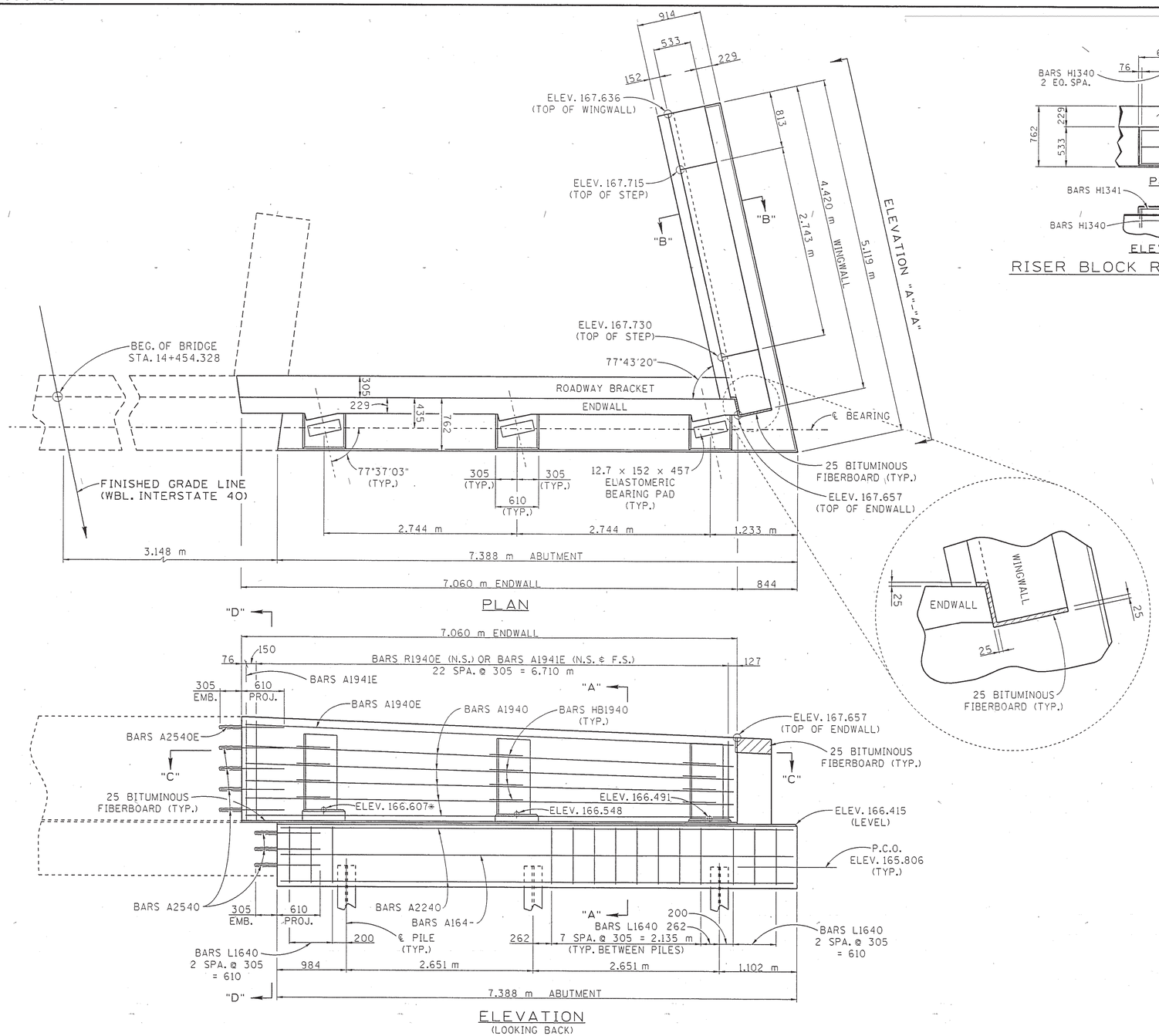
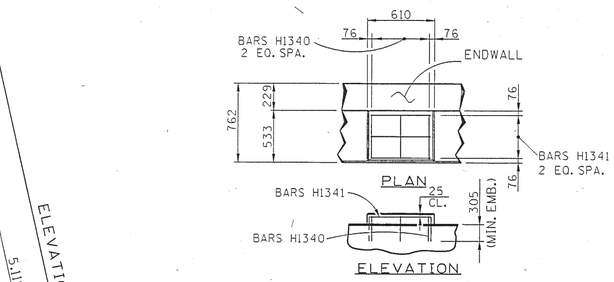
27-FEB-1998
11:44

ABT096M.DGN





RISER BLOCK REINFORCING DETAIL

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ABUTMENT GENERAL NOTES

NOTE: WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOST AND PARAPETS. FOR DETAILS OF WINGPOSTS AND PARAPET SEE STD. DWG. NO. STDM-1-1.

NOTE: COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE BRIDGE RAIL SYSTEM.

NOTE: WINGBEAM PILES (MAXIMUM LENGTH OF 6.000 m) SHALL BE DRIVEN TO THE PLANS TIP ELEVATION OR REFUSAL.

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) m^3	STEEL BAR REINFORCEMENT (BRIDGES) kg	EPOXY-COATED REINFORCING STEEL kg
14	1058	315

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

METRIC

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
ABUTMENT NO. 1
WIDENING OF INTERSTATE 40
OVER
40TH AVENUE
STATION 14+472.789
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR.
STATE OF TENNESSEE
3/26/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-103

DESIGNED BY L. PERRY DATE 11-97
DRAWN BY STEVEN STEELE DATE 11-97
SUPERVISED BY T. TOLLEY\R.L.H. DATE 11-97
CHECKED BY DATE

*DENOTES RISER BLOCK TO BE REINFORCED.

N.S. DENOTES NEAR SIDE
F.S. DENOTES FAR SIDE

/usr/steven/steven/abt096m.dg
2-MAR-1998
09:19

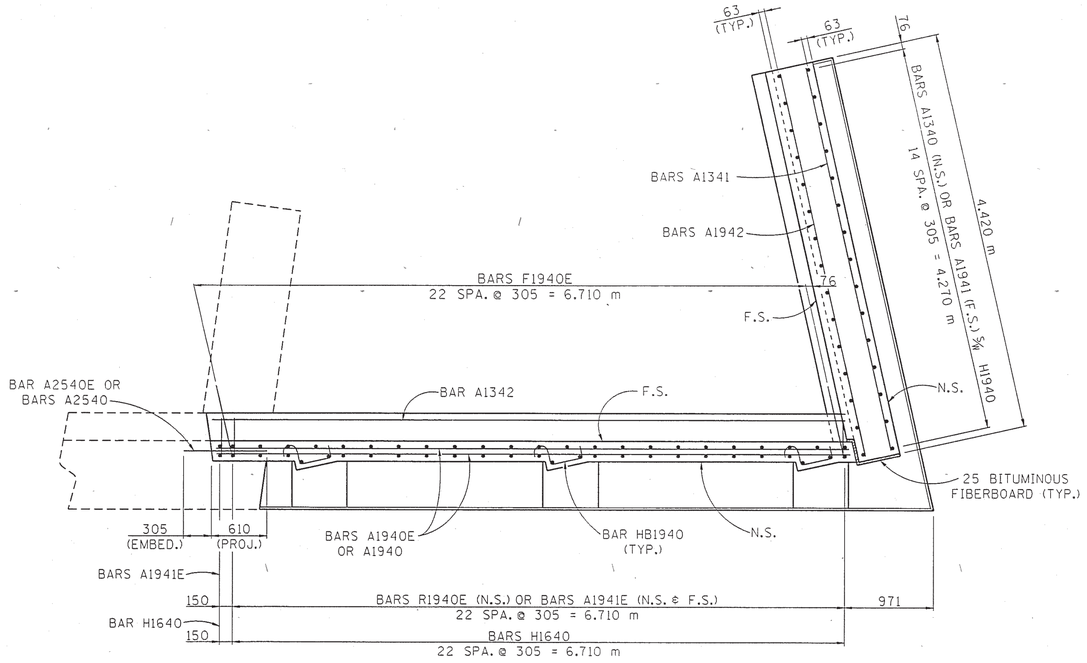
ABT096M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

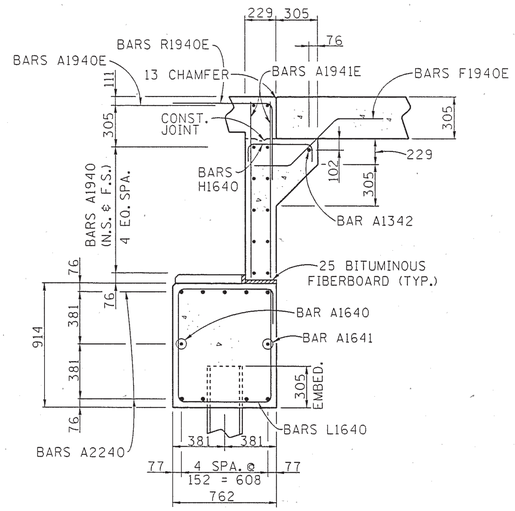
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

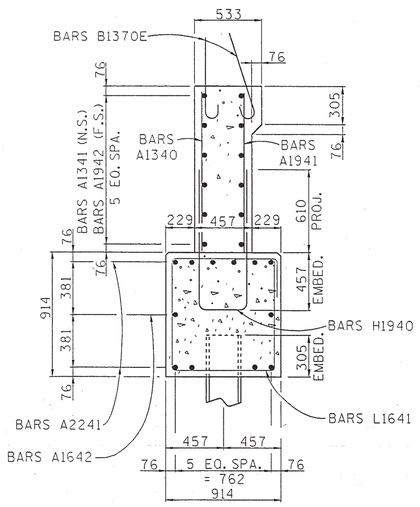


SECTION "C"-"C"

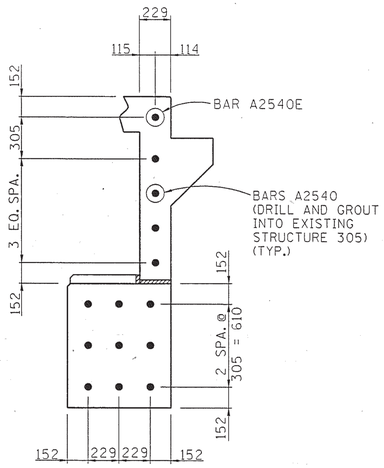
N.S. DENOTES NEAR SIDE
F.S. DENOTES FAR SIDE



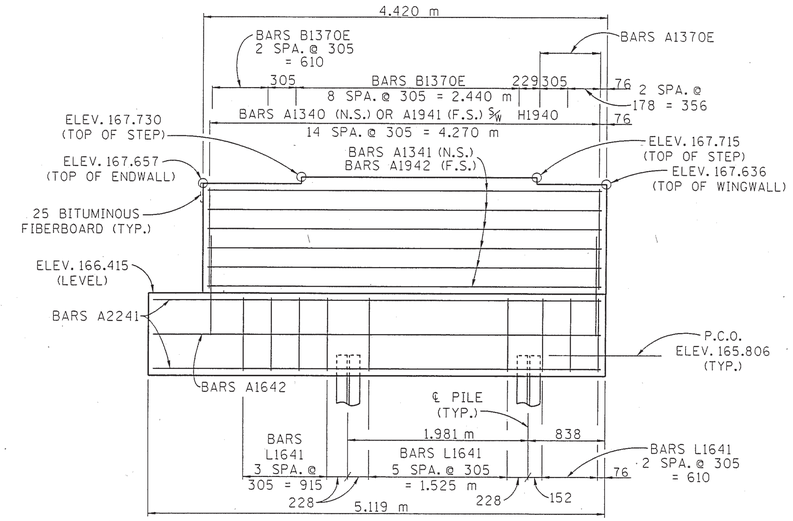
SECTION "A"-"A"



SECTION "B" - "B"



SECTION "D"-"D"
(SHOWING DRILL & GROUTED BARS)



ELEVATION "A" - "A"

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

DESIGNED BY L. PERRY DATE 11-97
DRAWN BY STEVEN STEELE DATE 11-97
SUPERVISED BY T. TOLLEY/R.L.H. DATE 11-97
CHECKED BY DATE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
ABUTMENT NO. 1 DETAILS
WIDENING OF INTERSTATE 40 OVER 40TH AVENUE
STATION 14+472.789
DAVIDSON COUNTY
1998

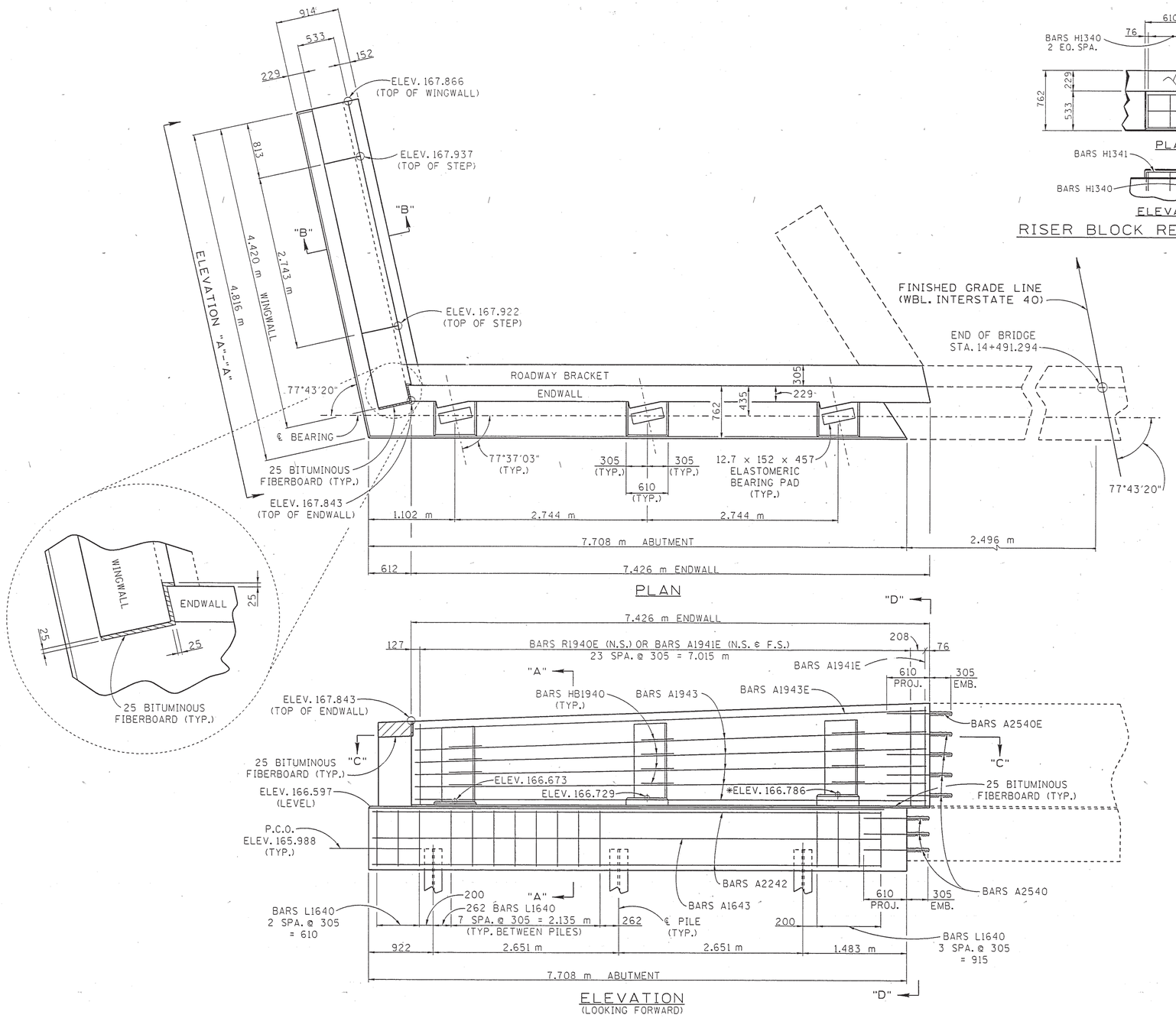
HARDIE M. BROOKS 20... 3/16/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-104

/usr/staff/steven/steven/ab-096m.dgn
03-19-1998 08:19

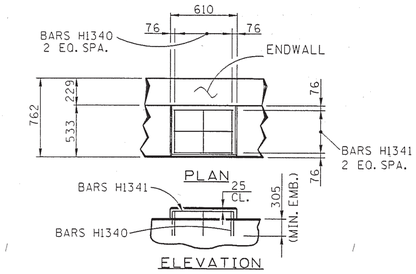
ABT096M.DGN



ELEVATION
(LOOKING FORWARD)

N.S. DENOTES NEAR SIDE
F.S. DENOTES FAR SIDE

*DENOTES RISER BLOCK TO BE REINFORCED.



RISER BLOCK REINFORCING DETAIL

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ABUTMENT GENERAL NOTES

NOTE: WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOST AND PARAPETS. FOR DETAILS OF WINGPOSTS AND PARAPET SEE STD. DWG. NO. STDM-1-1.

NOTE: COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE BRIDGE RAIL SYSTEM.

NOTE: WINGBEAM PILES (MAXIMUM LENGTH OF 6.096 m) SHALL BE DRIVEN TO THE PLANS TIP ELEVATION OR REFUSAL.

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.



RISER BLOCK SLOPE DETAIL

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) m^3	STEEL BAR REINFORCEMENT (BRIDGES) kg	EPOXY-COATED REINFORCING STEEL kg
15	1086	327

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 2
ABUTMENT NO. 2
WIDENING OF INTERSTATE 40
OVER
40TH AVENUE
STATION 14+472.789
DAVIDSON COUNTY
1998

HARDIE M. BROOKS JR. — REGISTERED ENGINEER — STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY L. PERRY DATE 11-97
DRAWN BY STEVEN STEELE DATE 11-97
SUPERVISED BY T. TOLLEY/R.L.H. DATE 11-97
CHECKED BY DATE

M-359-105

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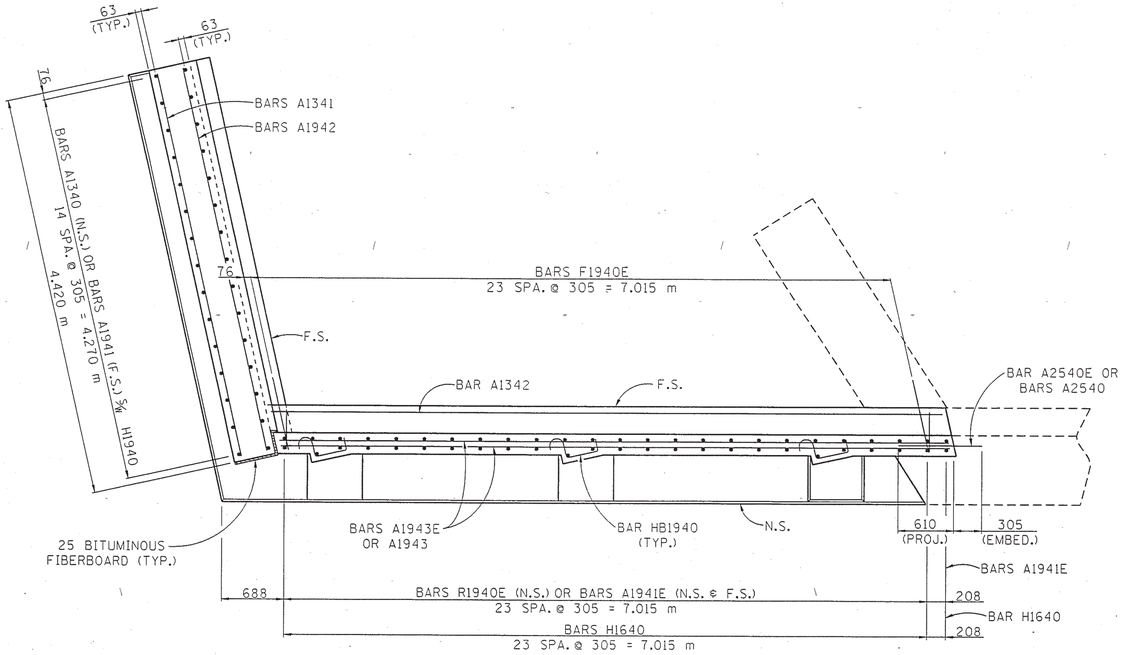
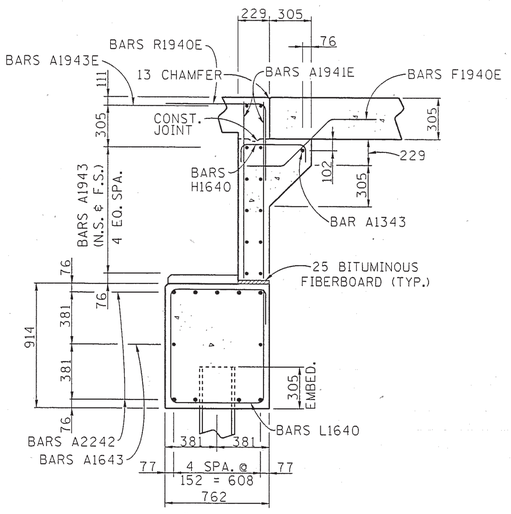
ABT096M.DGN

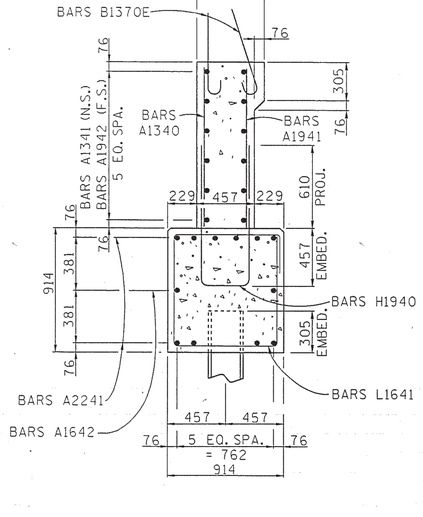


SECTION "C"-"C"

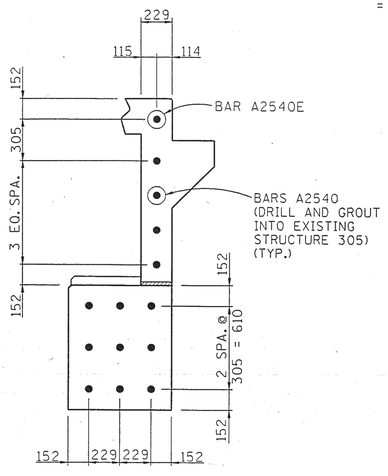
N.S. DENOTES NEAR SIDE
F.S. DENOTES FAR SIDE



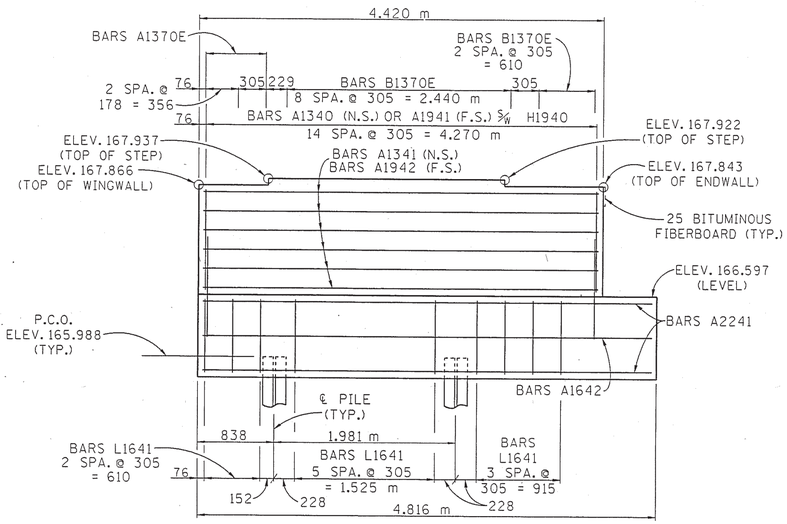
SECTION "A"-"A"



SECTION "B" - "B"



SECTION "D"-"D"
(SHOWING DRILL & GROUTED BARS)



ELEVATION "A" - "A"

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
ABUTMENT NO. 2 DETAILS
WIDENING OF INTERSTATE 40 OVER 40TH AVENUE
STATION 14+472.789
DAVIDSON COUNTY
1998

HARDIE M. BROOKS — REGISTERED ENGINEER — STATE OF TENNESSEE — 3/16/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY L. PERRY DATE 11-97
DRAWN BY STEVEN STEELE DATE 11-97
SUPERVISED BY T. TOLLEY/R.L.H. DATE 11-97
CHECKED BY DATE

M-359-106

/usr/stevens/steven/abt096m.dgn
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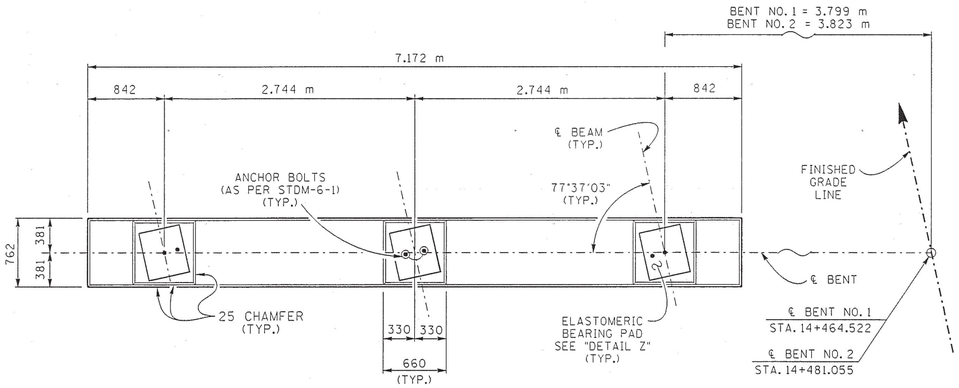
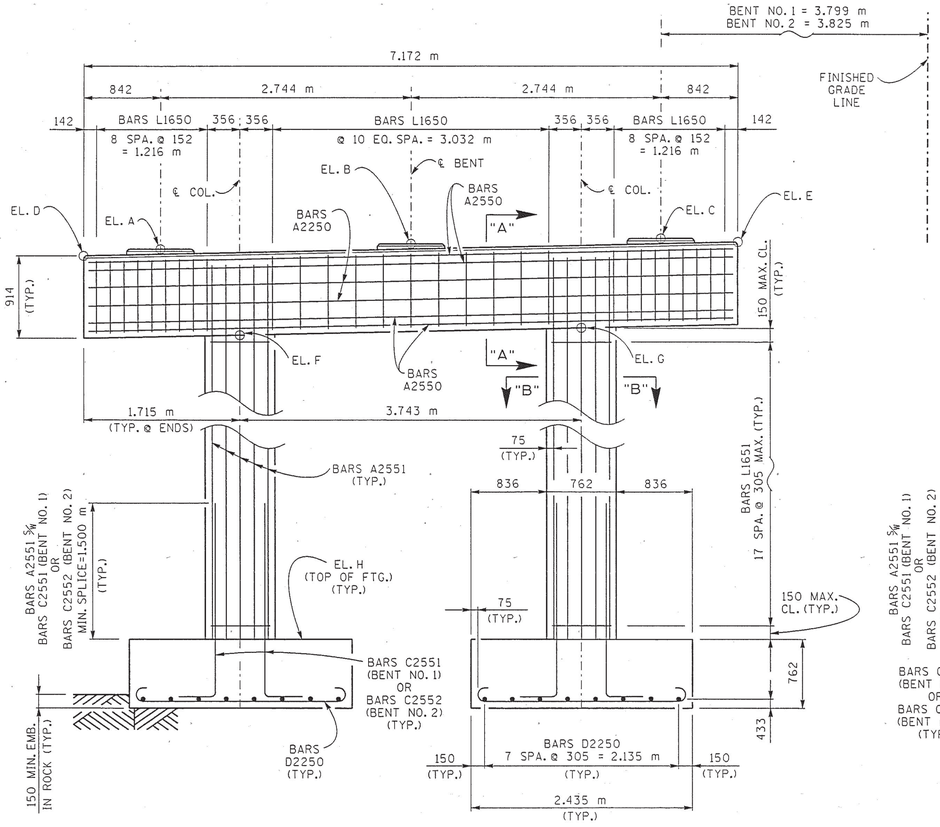
BNT055M.DGN

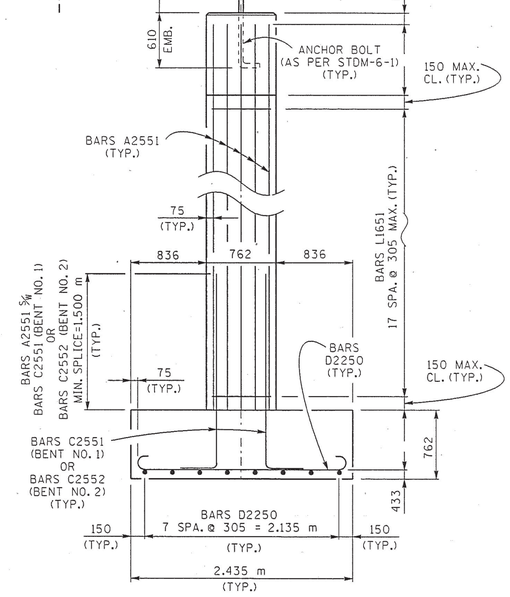


PLAN



ELEVATION

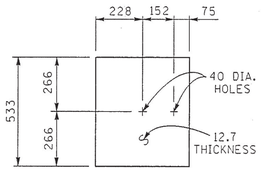
(LOOKING FORWARD ON SURVEY)



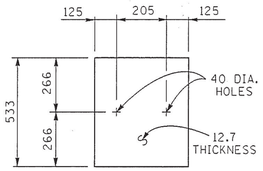
END ELEVATION

TABLE OF ELEVATIONS

	EL. "A"	EL. "B"	EL. "C"	EL. "D"	EL. "E"	EL. "F"	EL. "G"	EL. "H"
BENT NO. 1	166.538	166.596	166.653	166.464	166.613	165.587	165.659	160.362
BENT NO. 2	166.621	166.679	166.736	166.464	166.696	165.587	165.742	160.477



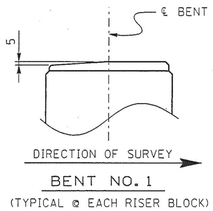
BENT FASCIA BEAM



BENT INTERIOR BEAM

DETAIL Z

(DIMENSIONS FOR NON-STANDARD ELASTOMERIC BEARING PAD)



BENT NO. 1

(TYPICAL @ EACH RISER BLOCK)

RISER BLOCK SLOPE DETAIL

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTE: WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING STDM-6-1. BOLT PROJECTION 280 mm.

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

NOTE: RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.

NOTE: COLUMN STEEL TO EXTEND 787 MAX. INTO CAP BEAM.

ESTIMATED QUANTITIES

	CLASS "A" CONCRETE (BRIDGES) (M^3)	STEEL BAR REINFORCEMENT (BRIDGES) (KG)
BENT NO. 1	21	2438
BENT NO. 2	21	2424

DIVISION OF STRUCTURES — METRIC

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
BENTS NO. 1 ℄ 2
WIDENING OF I-40
OVER
40TH AVENUE
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. REG. NO. 17746 — STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY LAWRENCE PERRY DATE 05-97
DRAWN BY DIANE BUSH DATE 12-97
SUPERVISED BY RLH / JHP / TT DATE 05-97
CHECKED BY _____ DATE -98

M-359-107

/usr/steven/steven/bnt055m.dg
27-FEB-1998
10:05

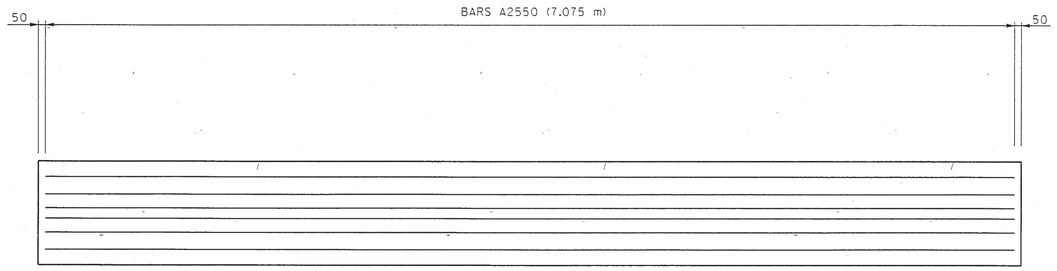
BNT055M.DGN

CONST. NO. 19005-3139-44

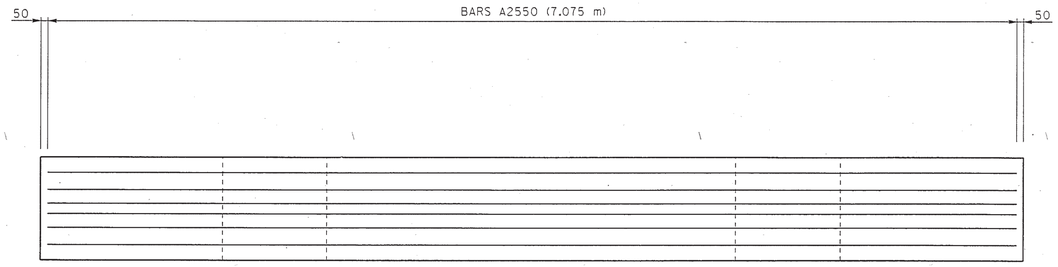
PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

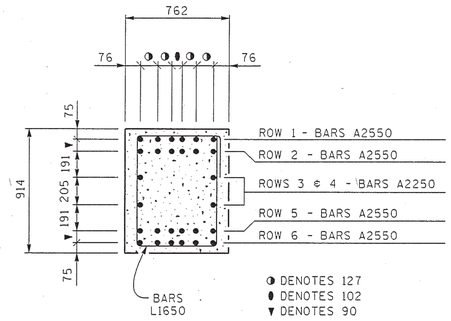


ROWS 1 & 2

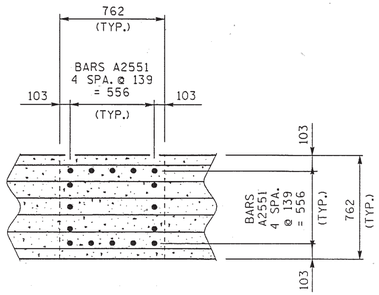


ROWS 5 & 6

PLAN OF MAIN REINFORCEMENT



SECTION "A-A"



SECTION "B-B"

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2
BENTS NO. 1 & 2 DETAILS
WIDENING OF I-40
OVER
40TH AVENUE
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-108

DESIGNED BY LAWRENCE PERRY DATE 05-97
DRAWN BY DIANE BUSH DATE 12-97
SUPERVISED BY RLH / JHP / TT DATE 05-97
CHECKED BY DATE -98

/usr/steven/steven/bnt055m.dg
27-FEB-1998
15:06

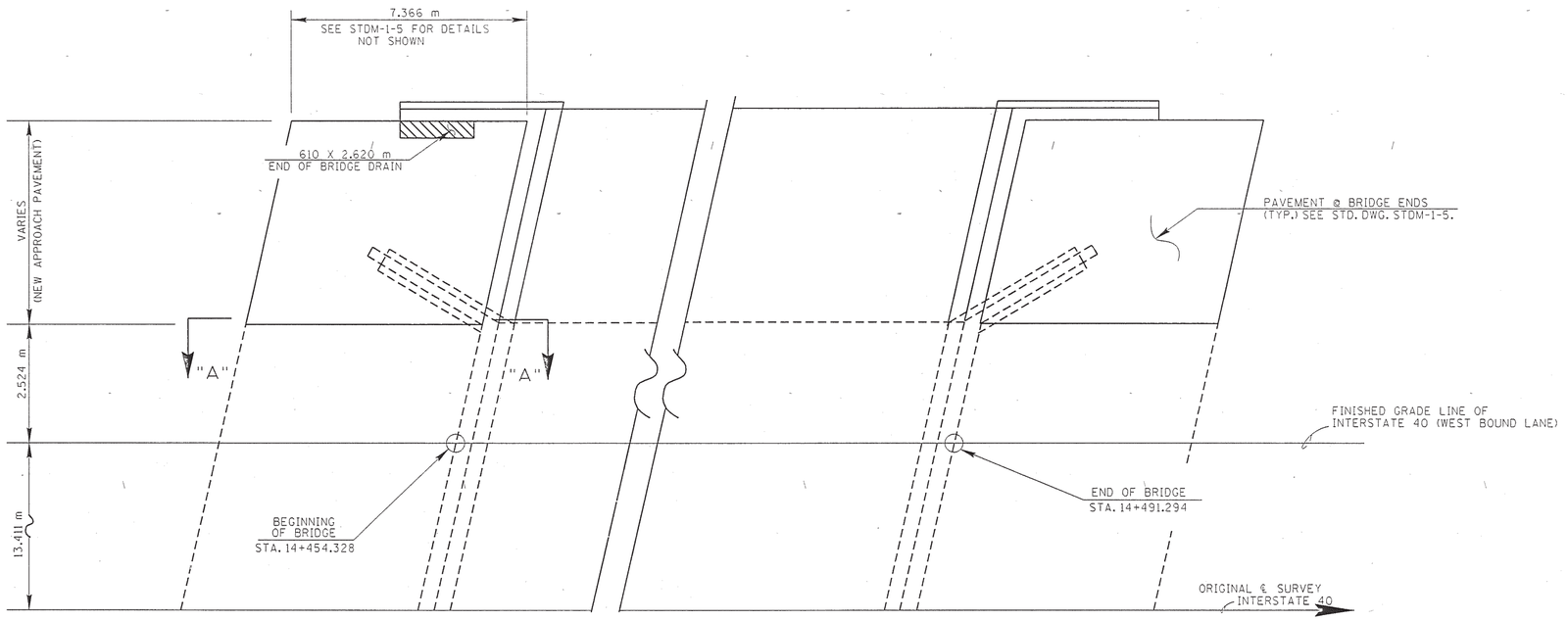
MIS059.DGN

CONST. NO. 19005-3139-44

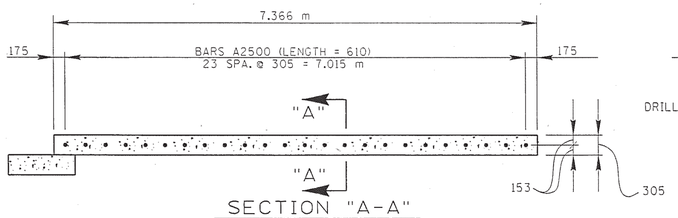
PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

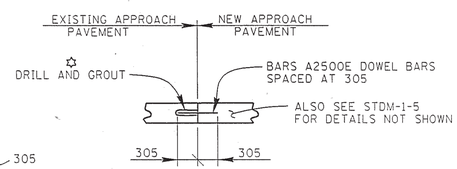


PARTIAL PLAN



SECTION "A-A"

(SHOWING PLACEMENT OF DOWEL BARS A2500E INTO EXISTING CONCRETE APPROACH @ ABUT.NO. 1)
(ABUT.NO. 2 IS SIMILAR)



SECTION "B-B"

✡ DENOTES : HOLES ARE TO BE DRILLED INTO THE EXISTING CONCRETE APPROACH SUCH THAT THE A25-- BARS CAN BE PLACED. HOLES SHALL BE DRILLED 12.7mm IN DIA. LARGER THAN THE BAR, CLEANED, PACKED ANTI NON-SHRINK GROUT, AND THE ROATED (NOT DRIVEN) TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY TENNESSEE DEPARTMENT OF TRANSPORTATION MATERIALS AND TESTS.

NOTE: DASHED LINES INDICATE EXISTING STRUCTURE.

NOTE: SEE STDM-1-5 FOR DETAILS NOT SHOWN

NOTE: LIMITS OF EXISTING APPROACH PAVEMENT SHALL BE FIELD VERIFIED PRIOR TO ORDERING REINFORCING STEEL.

DIVISION OF STRUCTURES METRIC

NOTE: ALL DIMENSIONS SHOWN IN METERS UNLESS OTHERWISE NOTED.

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

APPROACH PAVEMENT
MODIFICATIONS
WIDENING OF INTERSTATE 40
(WEST BOUND LANE) OVER
40TH AVENUE
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY
1998

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 3/26/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-359-109

DESIGNED BY L. PERRY DATE 05-96
DRAWN BY FRANK F. FROST DATE 05-96
SUPERVISED BY T. TOLLEY DATE 05-96
CHECKED BY DATE

/usr/steven/steven/mis059.dgn
27-FEB-1998
14:18

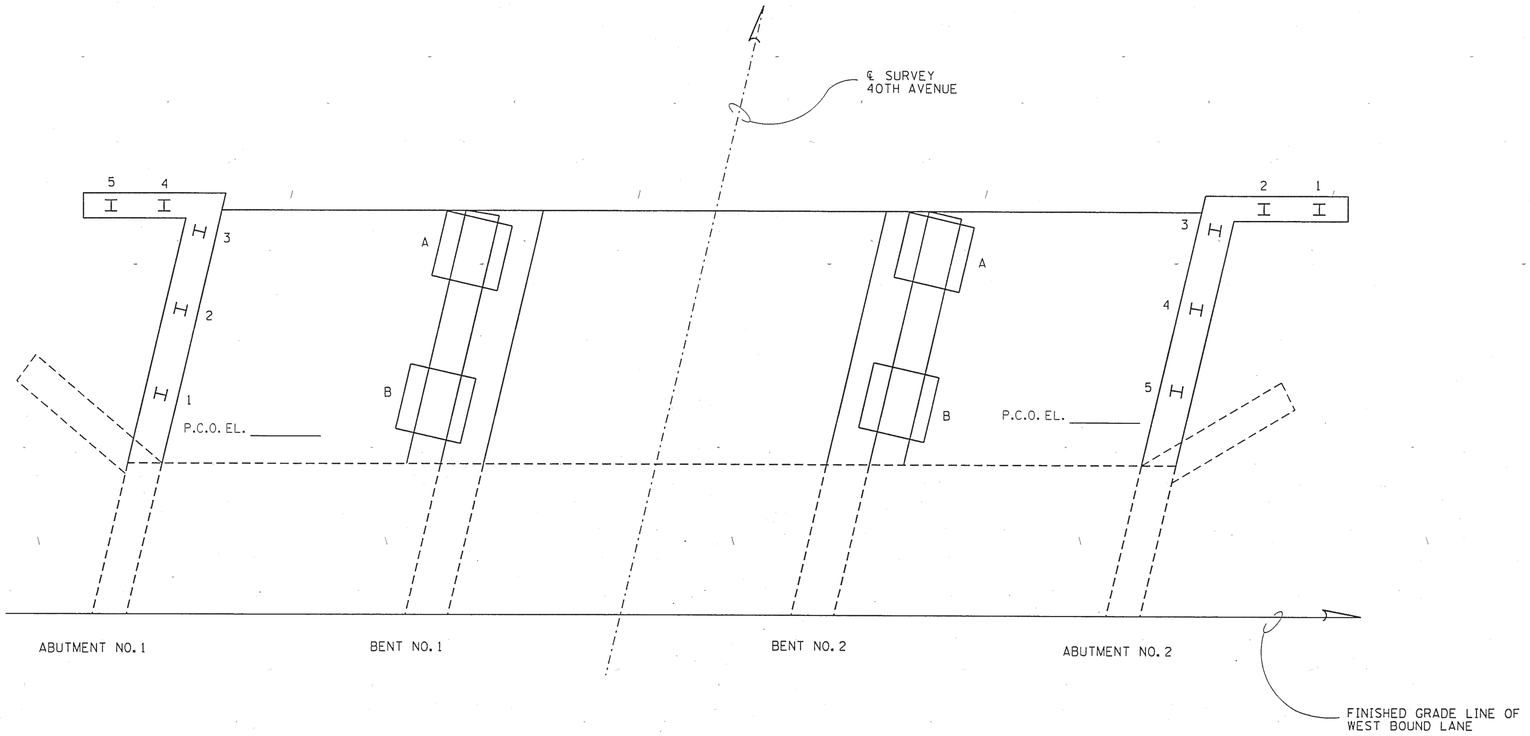
FFD093M.DGN

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



NOTE TO CONTRACTOR AND CONSTRUCTION OFFICE:

THE BLANKS ON THIS SHEET ARE TO BE FILLED IN BY THE CONSTRUCTION OFFICE AND/OR FIELD ENGINEER GIVING AS BUILT CONDITIONS. AFTER COMPLETION IT IS TO BE SENT TO THE DIVISION OF STRUCTURES TO BECOME PART OF FINAL BRIDGE DOCUMENTS.

TABLE OF PILE DATA

		1	2	3	4	5
ABUTMENT NO. 1	PILE TIP ELEVATION					
	IN PLACE PILE LENGTH					
ABUTMENT NO. 2	PILE TIP ELEVATION					
	IN PLACE PILE LENGTH					

TABLE OF FOOTING DATA

	BENT NO. 1		BENT NO. 2	
	A	B	A	B
TOP OF FOOTING ELEV.				
BOTTOM OF FOOTING ELEV.				

HARDIE M. BROOKS, JR. Registered Engineer STATE OF TENNESSEE 3/26/98

DIVISION OF STRUCTURES METRIC

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FINAL FOUNDATION DATA
WIDENING OF
INTERSTATE 40
OVER
40TH AVENUE
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY
1998

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY L. PERRY DATE 5-96
DRAWN BY M. DYE DATE 2-98
SUPERVISED BY R.L.H. / H.M.B. DATE 2-98
CHECKED BY L. PERRY DATE 2-98

M-359-110

B050089M.DGN

BILL OF STEEL

SUPERSTRUCTURE

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A1600	DIAPHRAGM	16	32					1.775
A1601	DIAPHRAGM	16	16					3.975
L1300	DIAPHRAGM	13	32	0.130	0.305	0.840		2.250
LS1300	DIAPHRAGM	13	12	0.130	0.355			1.325

SUPERSTRUCTURE (EPOXY-COATED)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A1602E	SLAB	16	70					18.288
A1603E	SLAB	16	44					6.100
A1604E	SLAB	16	32					9.150
A1605E	SLAB	16	38					5.775
A1606E	SLAB	16	486					7.200
A1900E	SLAB	19	88					9.150
B1370	PARAPET & SLAB	13	242	0.675				0.825

ABUTMENT NO. 1

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A1340	WINGWALLS	13	15					1.175
A1341	WINGWALLS	13	6					4.325
A1342	ROADWAY BRACKET	13	1					6.950
A1640	ABUT. BEAM	16	1					7.275
A1641	ABUT. BEAM	16	1					7.050
A1642	WING BEAMS	16	2					4.825
A1940	ENDWALL	19	10					6.950
A1941	WINGWALL	19	15					1.175
A1942	WINGWALL	19	6					4.325
A2240	ABUT. BEAM	22	9					7.050
A2241	WING BEAMS	22	10					4.825
A2540	ENDWALL	25	13					0.925
H1340	RISER BLOCK	13	3	0.430	0.445			1.325
H1341	RISER BLOCK	13	3	0.510	0.445			1.400
H1640	ROADWAY BRACKET	16	24	0.430	0.150			0.725
H1940	ABUT. BEAM	19	15	0.335	1.065			2.550
HB1940	FILLER	19	12	0.355	0.305	0.255		1.150
L1640	ABUT. BEAM	16	22	0.660	0.305	0.810		3.250
L1641	WING BEAM	16	13	0.810	0.305	0.810		3.550

ABUTMENT NO. 1 EPOXY-COATED

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A1370E	ENDWALL	13	8					1.075
A1940E	ENDWALL	19	2					6.950
A1941E	ENDWALL	19	48					1.175
A2540E	ENDWALL	25	1					0.925
B1370E	WINGWALL	13	24	0.710				0.875
F1940E	ENDWALL	19	23	0.330	0.380	0.330	0.380	1.200
R1940E	ENDWALL	19	23	0.610	0.610			1.225

ABUTMENT NO. 2

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A1340	WINGWALLS	13	15					1.175
A1341	WINGWALLS	13	6					4.325
A1342	ROADWAY BRACKET	13	1					7.325
A1642	WING BEAMS	16	2					4.725
A1643	ABUT. BEAM	16	2					7.600
A1941	WINGWALL	19	15					1.175
A1942	WINGWALL	19	6					4.325
A1943	ENDWALL & WINGWALL	19	10					7.325
A2241	WING BEAMS	22	10					4.725
A2242	ABUT. BEAM	22	9					7.600
A2540	ENDWALL	25	13					0.925
H1340	RISER BLOCK	13	3	0.430	0.445			1.325
H1341	RISER BLOCK	13	3	0.510	0.445			1.400
H1640	ENDWALL	16	25	0.430	0.150			0.725
H1940	ABUT. BEAM	19	15	0.335	1.065			2.475
HB1940	FILLER	19	12	0.355	0.305	0.255		1.150
L1640	ABUT. BEAM	16	23	0.660	0.305	0.810		3.250
L1641	WING BEAM	16	13	0.810	0.305	0.810		3.550

ABUTMENT NO. 2 EPOXY-COATED

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A1370E	ENDWALL	13	8					1.075
A1941E	ENDWALL	19	50					1.175
A1943E	ENDWALL	19	2					7.325
A2540E	ENDWALL	25	1					0.925
B1370E	WINGWALL	13	24	0.710				0.875
F1940E	ENDWALL	19	24	0.330	0.380	0.330	0.380	1.200
R1940E	ENDWALL	19	24	0.610	0.610			1.225

BENT NO. 1

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A2250	CAP	22	4					7.075
A2550	CAP	25	24					7.075
A2551	COLUMNS	25	32					6.025
C2551	FOOTINGS & COLUMNS	25	32	2.190				2.550
D2250	FOOTINGS	22	32	2.285				2.800
L1650	CAP	16	29	0.685	0.305	0.840		3.350
L1651	COLUMNS	16	36	0.665	0.305	0.665		2.975

BENT NO. 2

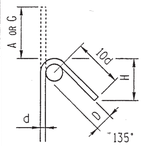
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIM. (m) A	B	C	D	LENGTH (m)
A2250	CAP	22	4					7.075
A2550	CAP	25	24					7.075
A2551	COLUMNS	25	32					5.900
C2552	FOOTINGS & COLUMNS	25	32	2.170				2.550
D2250	FOOTINGS	22	32	2.285				2.800
L1650	CAP	16	29	0.68	0.305	0.840		3.350
L1651	COLUMNS	16	36	0.665	0.305	0.665		2.975

CONST. NO. 19005-3139-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(68)205	1998	

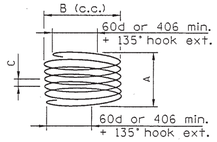
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

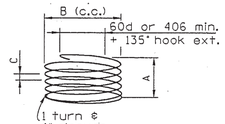


BAR SIZE	D (mm)	135° HOOK HOOK A OR G	135° HOOK H APPROX.
#13	50	165	114
#16	63	203	140
#19	114	260	165
#22	133	311	184
#25	152	362	229

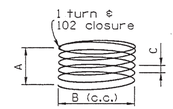
135° SEISMIC STIRRUP/TIE HOOK DIMENSIONS (ALL GRADES)



BARS M



BARS TB



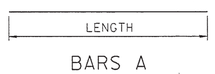
BARS CF

REINFORCING STEEL CODE

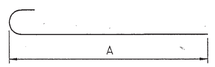
TYPE	SIZE	SERIES
A	16	06

NOTE: DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

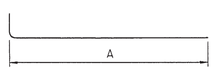
NOTE: THE SUFFIX E FOR BARS SO MARKED DENOTES EPOXY COATED REINFORCEMENT.



BARS A



BARS B



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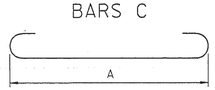

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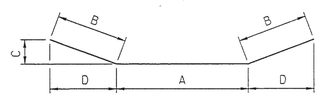
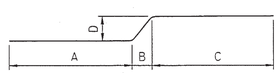
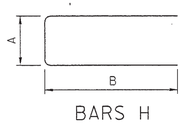


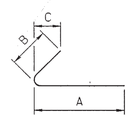
BARS E



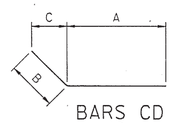
BARS F



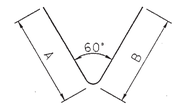
BARS H



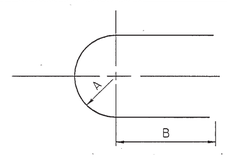
BARS CB



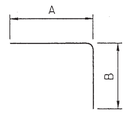
BARS CD



BARS VA



BARS XA



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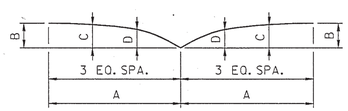
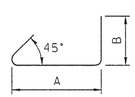
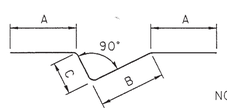


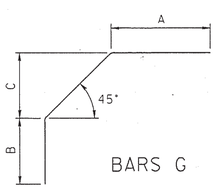
BARS V



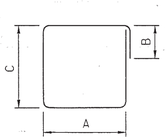
BARS YB



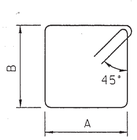
BARS JX



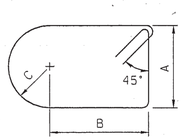
BARS G



BARS L



BARS LS



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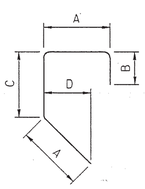

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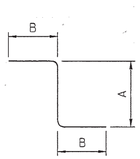

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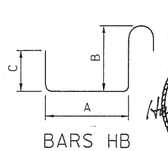


BARS HB

NOTE: ALL DIMENSIONS SHOWN IN METERS UNLESS OTHERWISE NOTED.

BRIDGE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

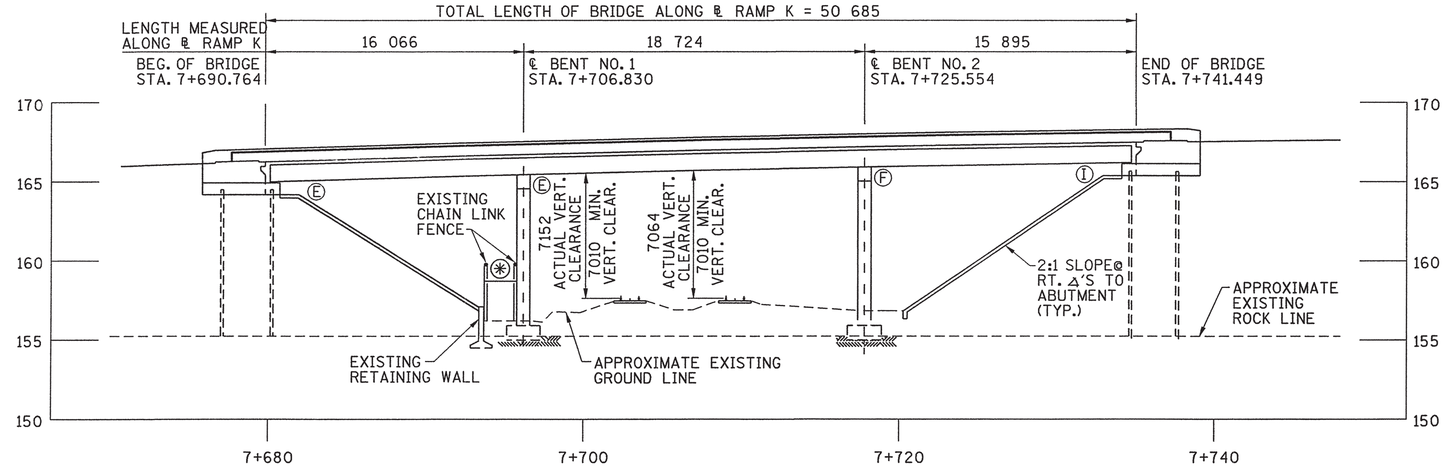
BILL OF STEEL
WIDENING OF INTERSTATE 40
(WEST BOUND LANE) OVER
40TH AVENUE
STATION 14+472.789
DAVIDSON COUNTY
1998

HARDIE N. BROOKS, JR. REGISTERED ENGINEER 15371 STATE OF TENNESSEE
Hardie N. Brooks, Jr. 3/16/98

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY L. PERRY DATE 12-97
DRAWN BY FARRAR DATE 1-98
SUPERVISED BY R.L.H./H.M.B. DATE 1-98
CHECKED BY DATE

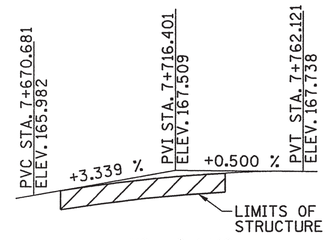
M-359-111



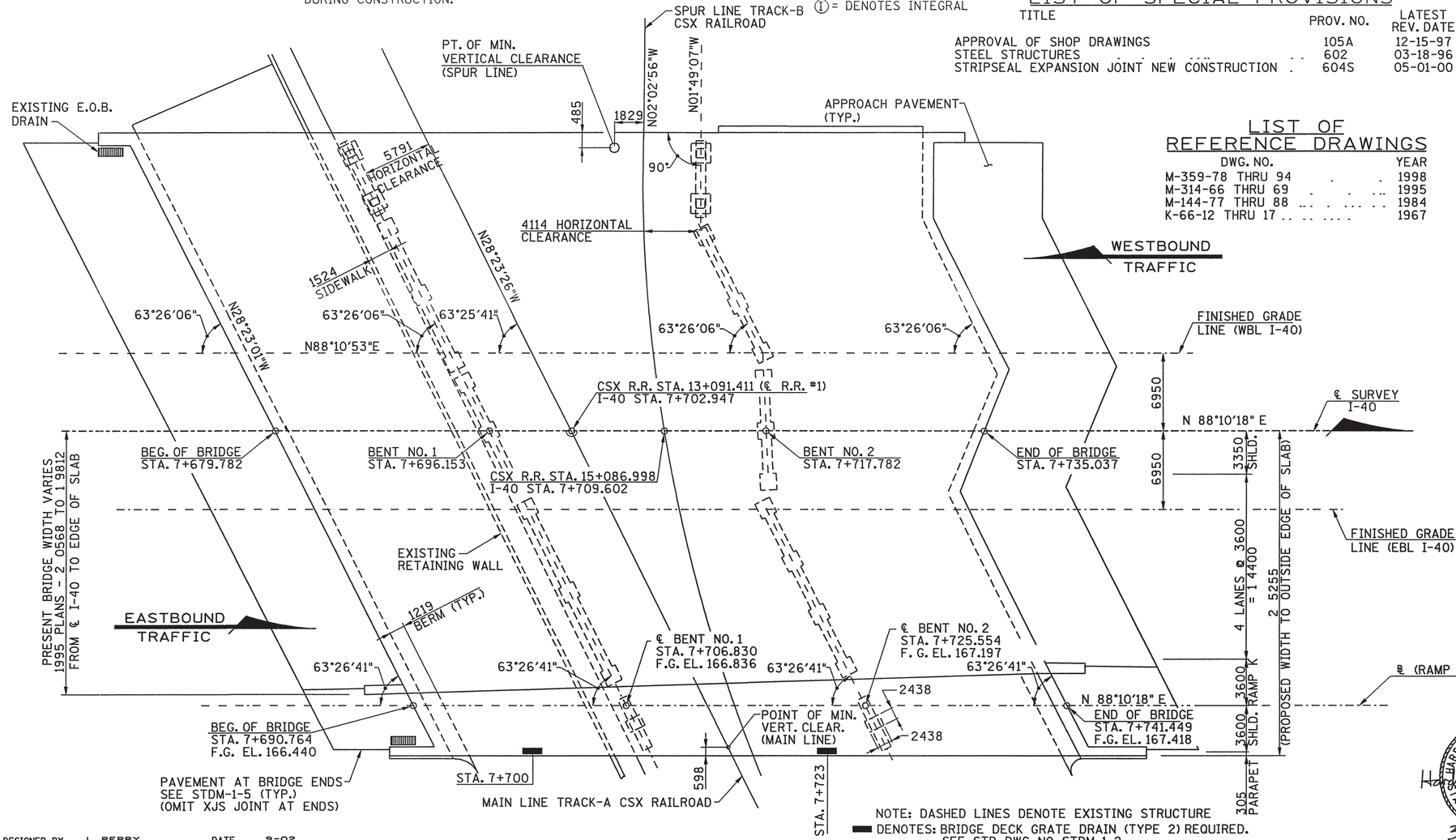
ELEVATION
SCALE 1:200

⊛ DENOTES: PEDESTRIAN TRAFFIC ON SIDEWALK IS TO BE CLOSED DURING CONSTRUCTION.

Ⓔ = DENOTES EXPANSION
Ⓕ = DENOTES FIXED
Ⓘ = DENOTES INTEGRAL



FINISHED GRADE SKETCH
(I-40)



PLAN
SCALE 1:200

NOTE: DASHED LINES DENOTE EXISTING STRUCTURE
▬ DENOTES: BRIDGE DECK GRATE DRAIN (TYPE 2) REQUIRED. SEE STD. DWG. NO. STDM-1-2.
▥ DENOTES: END OF BRIDGE DRAIN (1220 X 2620) REQUIRED. SEE STD. DWG. NO. STDM-1-6, STDM-1-7 & STDM-1-9.

LIST OF SPECIAL PROVISIONS

TITLE	PROV. NO.	LATEST REV. DATE
APPROVAL OF SHOP DRAWINGS	105A	12-15-97
STEEL STRUCTURES	602	03-18-96
STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION	604S	05-01-00

LIST OF REFERENCE DRAWINGS

DWG. NO.	YEAR
M-359-78 THRU 94	1998
M-314-66 THRU 69	1995
M-144-77 THRU 88	1984
K-66-12 THRU 17	1967

LIST OF DRAWINGS

TITLE	DWG. NO.	LATEST REV. DATE
LAYOUT OF BRIDGE	M-435-82	03-21-05
GENERAL NOTES	M-435-83	
ESTIMATED QUANTITIES	M-435-83A	10-17-02
FOUNDATION DATA	M-435-84	12-11-01
SUPERSTRUCTURE	M-435-85	11-08-02
SUPERSTRUCTURE DETAILS	M-435-86	11-08-02
SUPERSTRUCTURE DETAILS	M-435-87	11-08-02
SUPERSTRUCTURE DETAILS	M-435-88	05-14-03
SUPERSTRUCTURE DETAILS	M-435-89	11-08-02
ABUTMENT NO. 1 & 2	M-435-90	11-08-02
ABUTMENT NO. 1 & 2 DETAILS	M-435-91	11-08-02
BENT NO. 1	M-435-92	06-01-04
BENT NO. 1	M-435-92A	06-01-04
BENT NO. 2	M-435-93	06-01-04
BENT NO. 2	M-435-93A	06-01-04
FINAL FOUNDATION DATA	M-435-94	11-08-02
BILL OF STEEL	M-435-95	11-08-02

LIST OF STANDARD DRAWINGS

TITLE	DWG. NO.	LATEST REV. DATE
STRIPSEAL EXPANSION REPAIR	SBRM-2-115	06-01-96
STRIPSEAL EXPANSION REPAIR	SBRM-2-116	06-01-96
STRIPSEAL EXPANSION REPAIR	SBRM-2-117	09-09-96
BRIDGE RAILING CONCRETE PARAPET	STDM-1-1	07-31-00
SLIDER PLATE AND DECK DRAIN	STDM-1-2	01-05-01
PAVEMENT AT BRIDGE ENDS	STDM-1-5	07-31-00
BRIDGE END DRAIN WITH PAVEMENT AT BRIDGE ENDS	STDM-1-6	04-28-97
BRIDGE END DRAIN WITH PAVEMENT AT BRIDGE ENDS	STDM-1-7	07-31-00
BRIDGE END DRAIN 1220 X2620 WITH PABE	STDM-1-9	06-10-96
STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION	STDM-3-1	06-10-96
STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION	STDM-3-2	06-10-96
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STDM-4-1	05-21-99
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS DESIGN CRITERIA	STDM-4-2	06-10-96
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STDM-4-3	06-10-96
STD. PRECAST PRESTRESSED BRIDGE DECK PANELS CONSTRUCTION DETAILS	STDM-4-4	06-10-96
STANDARD PILE DETAILS	STDM-5-1	06-10-96
STANDARD PILE DETAILS	STDM-5-2	05-21-99
STANDARD SEISMIC DETAILS	STDM-6-1	05-21-99
LIGHT STANDARD SUPPORT DETAILS	STDM-8-2	06-10-96
STANDARD REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS	STDM-9-1	06-10-96
MISCELLANEOUS ABUTMENT & DRAINAGE DETAILS	STDM-10-1	06-10-96

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	05/14/03	LP	GENERAL REVISIONS
2	03/21/05	H.M.B	GENERAL REVISIONS

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

1 LAYOUT OF BRIDGE
WIDENING OF INTERSTATE 40 (EASTBOUND LANE) AND RAMP K OVER C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

M-435-82

DESIGNED BY L. PERRY DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY L. PERRY DATE 9-02

GRESHAM SMITH AND PARTNERS

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

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CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

GENERAL NOTES:

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1, 1995 EDITION)

LOADING: MS18-44.

DESIGN SPECIFICATIONS: AASHTO 1996 EDITION WITH ADDENDA INCLUDING THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES. (SEISMIC PERFORMANCE CATEGORY A WITH ACCELERATION COEFFICIENT 0.075.)

CONCRETE: TO BE CLASS "A" (CAST IN PLACE.) f'c = 21 MPa UNLESS NOTED OTHERWISE.

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE "C" IN ARTICLE 604.23 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY REMAIN-IN-PLACE. STEEL SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL. SEE STANDARD DRAWINGS STDM-4-1 THRU 4, AND ARTICLE 604.05 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: SHALL BE ASTM A615M GRADE 400 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

SPECIAL NOTE FOR RAILROAD CROSSING: THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE DONE IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE C.S.X. RAILROAD SO AS TO MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC.

SPECIAL NOTE-FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING BEEN COMPLETED, HOLES 2M DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

PILES: TO BE HP250 X 62 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 490 KN FOR THE ABUTMENTS.

BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STDM-1-1.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED 12MM IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR ROTATED (NOT DRIVEN) TO ITS SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED 6MM IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A.

CONCRETE SEALER: CONCRETE SHALL BE APPLIED TO SUBSTRUCTURES COINCIDING WITH EXPANSION JOINT LOCATIONS BEFORE PLACEMENT OF BEARING DEVICES AND APPLYING TEXTURES COATING. [CONCRETE SEALER SHALL BE APPLIED TO THE FRONT VERTICAL FACE OF THE ABUTMENT BACKWALL, THE FRONT AND TOP OF THE ABUTMENT BEAM (PLUS CURTAIN WALLS, SUMP WALLS OR ANY OTHER FACES THAT ARE DEEMED NECESSARY BY THE ENGINEER).]
CONCRETE SHALL BE CLEAN AND DRY BEFORE APPLYING THE CONCRETE SEAL, AND THE THICKNESS OF THE SEAL SHALL BE AS RECOMMEND BY THE SEALANT MANUFACTURER. ACCEPTABLE CONCRETE SEALERS ARE INCLUDED IN THE QUALIFIED PRODUCTS LIST FOR NON-PENETRATING CONCRETE SEALS MAINTAINED BY THE DIVISION OF MATERIALS AND TESTS. THE SEALER SHALL BE CLEAR OR SIMILAR TO THE COLOR OF EXISTING CONCRETE SURFACES TO BE SEALED. THE COST OF THE SEALER, COMPLETE AND IN PLACE, SHALL BE INCLUDED IN THE UNIT PRICE OF THE EXPANSION DEVICE AT EACH SUBSTRUCTURE.

WELDING: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS AND NOTES ON DRAWING NO. M-435-85.

PAINT: INORGANIC ZINC WITH URETHENE FINISH-BROWN TOP COAT CONFORMING TO FEDERAL STANDARD 595A, SPEC. NO. 20059.

PAINTING STRUCTURAL STEEL: ALL SURFACES OF STRUCTURAL STEEL GIRDER MUST BE PAINTED. HOWEVER, THE FAYING SURFACES OF FIELD SPLICES, THE TOP OF THE TOP FLANGE, SURFACES EMBEDDED IN CONCRETE, AND BEARING AREAS SHALL RECEIVE ONLY 1 MIL THICKNESS OF SHOP COAT. BOLTED FAYING SURFACES FOR THIS PROJECT ARE DESIGNED FOR A CLASS B SURFACES. (SEE AASHTO TABLE 10.32.3C). THE CONTRACTOR SHALL INSURE THE FAYING SURFACES ARE PREPARED TO PROVIDE A SLIP COEFFICIENT AT LEAST EQUAL TO THAT REQUIRED FOR THIS CLASS. THE FAYING SURFACES ARE TO BE PAINTED, AS NOTED ABOVE, AND THE CONTRACTOR SHALL SUPPLY A PAINT MANUFACTURER'S CERTIFICATION THAT THE PAINT TO BE USED WILL PROVIDE THE REQUIRED RESISTANCE AT THE PROPOSED THICKNESS WHEN TESTED IN ACCORDANCE WITH AASHTO 10.32.3.2.3.

RADIOGRAPHIC, ULTRASONIC, AND MAGNETIC INSPECTION: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS AND NOTES OF DRAWING NO. M-435-85.

STEEL STRUCTURES: SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602 AND NOTES ON DRAWING NO. M-435-85, AND RAILROAD SPECIAL PROVISIONS.

DRILLED-IN ANCHORS (MECHANICAL OR EPOXY):
CERTIFICATION: THE CONTRACTOR SHALL FURNISH CERTIFIED ANCHOR PULL OUT DATA FROM AN INDEPENDENT TESTING LABORATORY USING CLASS "A" CONCRETE AS PRESCRIBED BY TENNESSEE HIGHWAY SPECIFICATIONS. THE REQUIRED ULTIMATE LOAD FOR 22.225 MM ø ANCHORS IS 84516N, 80067.996N FOR 19.06 MM ø ANCHORS, 53378.664N FOR 15.875 MM ø AND 40033.998N FOR 12.7 MM ø. IN PLACE REQUIREMENTS: THE UNITS SHALL BE SUBSET 2.38 MM TO 6.35 MM AND TORQUED, WITH BASE PLATE IN PLACE, TO AN EQUIVALENT DIRECT PULL OUT LOAD OF 60 PERCENT OF REQUIRED ULTIMATE LOAD. THE DEPARTMENT WILL PREFORM TESTING OF ANCHORS ON SITE TO INSURE THE SPECIFIED IN PLACE REQUIREMENTS. INSTALLATIONS NOT MEETING THESE REQUIREMENTS MUST BE CORRECTED AT THE CONTRACTOR'S EXPENSE. FOR MECHANICAL ANCHORS, SLIPPAGE SHALL NOT EXCEED 6.35 MM.

NOTE: OUR MAINTENANCE RECORDS INDICATE THIS BRIDGE HAS BEEN STRIPPED OF ALL LEAD AND/OR CHROMATE BASED PAINTS AND REPAINTED WITH INORGANIC ZINC PRIMER AND VINYL TOP COAT.

NOTE: THE CONTRACTOR SHALL SAW CUT 25.4MM DEEP INTO THE SLAB BEFORE REMOVING CONCRETE. ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE AND BE SPLICED WITH THE NEW REINFORCING. THE CONTRACTOR SHALL NOT USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILAR HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM ALLOWABLE HAMMER SIZE IS THE 27.19KG.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. A CLASS FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITEM 604MO4.01 AND 604MO4.02.

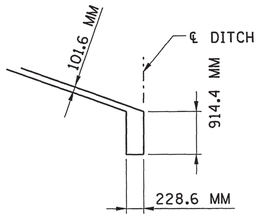
NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDER.

NOTE: THE FILLS AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

NOTE: FOR BOTH STEEL GIRDERS AND PRESTRESSED CONCRETE BEAMS, THE CONTRACTOR SHALL PROVIDE 10% CONVENTIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 4.5 M.

VALUE ENGINEERING ALTERNATE BRIDGE DESIGN CRITERIA: ALTERNATE BRIDGE DESIGN PROPOSALS MAY NOT DIMINISH THE FUNCTIONAL OR STRUCTURAL EQUIVALENCY OF THE BRIDGE AND MUST MEET OR EXCEED BOTH THE SERVICE LEVEL AND ULTIMATE CAPACITIES OF THE CONTRACT PLANS STRUCTURE. ADDITIONALLY, THE HORIZONTAL CLEARANCES MAY NOT BE REDUCED, NOR MAY THE VERTICAL CLEARANCES BE LESS THAN THE MINIMUM ACCEPTABLE FOR THE TYPE FACILITY CROSSED.

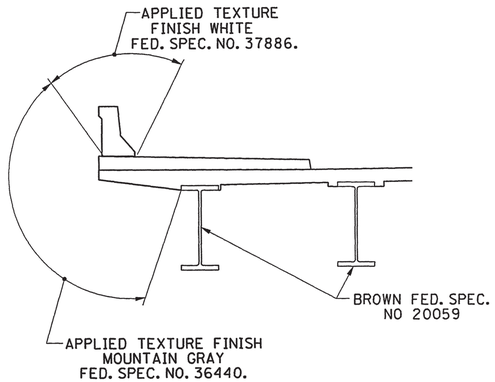
REQUIREMENTS AND RESTRICTIONS FOR PHASE CONSTRUCTION
1-THE LOCATION OF LONGITUDINAL CONSTRUCTION JOINTS SHALL NOT BE CHANGED TO ACCOMMODATE REMAIN IN PLACE DECK FORMS.
2-NO SHEET PILES OR BEARING PILES MAY BE DRIVEN FORM THE EXISTING OR PROPOSED STRUCTURE.
3-(NUMBER AND WIDTH) FOOT TRAFFIC LANES SHALL BE MAINTAINED AT ALL TIMES.



REINFORCED CONCRETE SLOPE PAVEMENT

PAVE SLOPES AND EXPOSED EARTH UNDERBRIDGE WITH 101.6 MM THICK CEMENT CONCRETE SLAB REINFORCED WITH 5.7 MM DIAMETER WIRE FABRIC @ 152.4 MM CENTERS AND 26.6 KG PER 9.29 SQUARE METERS. THE WIRE FABRIC REINFORCEMENT SHALL BE PLACED AT ONE-HALF THE DEPTH OF THE SLAB AND EXTEND TO WITHIN 76.2 MM OF ITS EDGE WITH A 304.8 MM LAP REQUIRED ON ALL SHEETS. THE COST OF THE WIRE FABRIC REINFORCEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 709MO4, REINFORCED CONCRETE SLOPE PAVEMENT. 12.7 MM PREMOULDED EXPANSION JOINTS WITHOUT LOAD TRANSFERS SHALL BE FORMED ABOUT ALL STRUCTURES AND FEATURES PROJECTING THROUGH, IN OR AGAINST THE UNDERRAIL CENTER LINES (RESPECTIVE) AT 1.829 METERS CENTERS. DEPTH OF GROOVE TO BE NOT LESS THAN 25.4 MM. SEE STD. DWG. STD. DWG. RDM-SA-1 FOR LIMITS OF SLOPE.

INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.



APPLIED TEXTURE FINISH SKETCH

NOTE: IN ADDITION TO THE SURFACES SHOWN IN THE APPLIED TEXTURE FINISH SKETCH ALL EXPOSED SURFACES OF THE PROPOSED WINGWALLS. ABUTMENT BEAMS, BENT AND EXTERIOR PORTIONS OF ENDWALLS ARE TO RECIEVE AND AN APPLIED TEXTURE FINISH (MOUNTAIN GREY, FED. SPEC. NO. 36440.) COST TO BE INCLUDED UNDER ITEM NO. 604MO4.01, APPLIED TEXTURE FINISH (NEW STRUCTURES)

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSeP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

HARDIE M. BROOKS, JR. 9/16/02
STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

M-435-83

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CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	10/17/02	HMB	REVISE QT'S FOR 604M03.01, 604M03.02, 604M04.01 & ADD ITEM 610M10.45

⚠1 ESTIMATED BRIDGE QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 1	BENT. NO. 1	BENT. NO. 2	ABUT. NO. 2
⑧	202M04.05	REMOVAL OF STRUCTURES (EXIST. BR. 19-I0040-13.65)	LS	1					
①	204M02.01	DRY EXCAVATION (BRIDGES)	M^3	66		14	15	22	15
②	204M04.01	ROCK EXCAVATION (BRIDGES)	M^3	2			1	1	
	204M05	ROCK DRILLING (BRIDGES)	M	4			2	2	
②	303M01.02	GRANULAR BACKFILL (BRIDGES)	TONNE	10		5			5
⑤	602M04.01	STEEL STRUCTURES	LS	1					
⑪	603M02.01	REPAINTING EXISTING STEEL STRUCTURES	LS	1					
	604M02.03	EPOXY COATED REINFORCING STEEL	Kg	8622	8172	213			237
⑨	604M03.01	CLASS "A" CONCRETE (BRIDGES)	M^3	61		12	14	15	20
	604M03.02	STEEL BAR REINFORCEMENT (BRIDGES)	Kg	6046		906	2038	2153	949
⑮③	604M03.04	PAVEMENT AT BRIDGE ENDS	M^2	72					
	604M03.09	CLASS "D" CONCRETE (BRIDGE DECK)	M^3	70	70				
	604M04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	M^2	350					
	604M05.31	BRIDGE DECK GROOVING (MECHANICAL)	M^2	374					
	604M10.50	BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB)	M^2	20					
	604M10.30	BRIDGE DECK REPAIRS (FULL DEPTH OF SLAB)	M^2	10					
⑫⑬	604M10.32	EXPANSION JOINT REPAIRS (TYPE A)	M	28					
⑭	604M10.44	EXPANSION JOINT REPAIRS	M	26					
	606M02.03	STEEL PILES (250mm)	M	71					
	620M03.10	CONCRETE PARAPET (STDM-1-1)	M	59					
	709M04	REINFORCED CONCRETE SLOPE PAVEMENT	M^3	20					
④	710M09.01	150mm PERFORATED PIPE WITH VERTICAL DRAIN SYSTEM	M	18					
	710M09.02	150mm PIPE UNDERDRAIN	M	8					
⑩	714M01.05	STRUCTURAL LIGHTING (BRIDGE NO. 5)	LS	1					
	908M21.01	BEARINGS (ABUTMENT NO. 1)	EA	2					
	908M21.02	BEARINGS (BENT NO. 1)	EA	2					
⑥	610M10.45	DECK DRAINS (GRATE TYPE 1) (STDM-1-2)	EA	2					

① NOTE: EXCAVATION BASED ON EXISTING GROUNDLINE.

② NOTE: GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STANDARD DRAWING STDM-10-1.

③ NOTE: PRIOR TO CONSTRUCTION OF THE PAVEMENT AT BRIDGE ENDS, THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL.

④ NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.

⑤ NOTE: LUMP SUM: TOTAL ESIMATED WEIGHT OF 24,185 KG OF STRUCTURAL STEEL INCLUDES: GIRDERS, STIFFENERS, SHEAR CONNECTORS, BOLTS, DIAPHRAGMS, AND BEARING PLATES AT BENT NO. 2 AND ABUTMENT NO. 2 . ALSO SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602.49 & 602.50.

⑥ NOTE: COST OF 2 BRIDGE DECK DRAINS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE PARAPET.

⑦ NOTE: COST OF WATER STOPS, BITUMINOUS-FIBERBOARD, EPOXY JOINTS, ETC., AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS.

⑧ NOTE: COST OF REMOVING THE EXTERIOR PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT, AND THE BRIDGERAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202M04.05.

⑨ NOTE: COST OF RUBBER BONDING CEMENT AND ELASTOMERIC BEARING PADS TO BE INCLUDED IN UNIT PRICE BID FOR CLASS "A" CONCRETE @ BENT NO. 2 & ABUT. NO. 2.

⑩ NOTE: STRUCTURAL LIGHTING INCLUDES: ① 31.75MM RGS CONDUIT (65 MM); ② 101.6MM X 101.6MM X 38MM SQ. METAL JUNCTION BOX (EA.=4). SEE RDWY. SHEET 46BB.

⑪ NOTE: LUMP SUM INCLUDES CLEANING ALL EXISTING BEARINGS WITH A WIRE BRUSH AND REPAINTING WITH SYSTEM B (BROWN, NO. 20059). SEE SECTION 603 OF SPECIAL PROVISIONS FOR CONTAINMENT AND DISPOSAL.

⑫ NOTE: PRICE BID FOR ROADWAY EXPANSION DEVICES TO INCLUDE COST OF 15 M^2 OF CONCRETE SEAL REQUIRED. SEE GENERAL NOTES FOR DESCRIPTION OF CONCRETE SEAL.

⑬ NOTE: THE EXPANSION JOINT AT ABUTMENT NO. 1 SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION 604S, AND STANDARD DRAWINGS STDM-3-1 AND STDM-3-2. THE TOTAL REQUIRED MOVEMENT IS 40 MM. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF STRUCTURES FOR APPROVAL.

⑭ NOTE: OPEN JOINT(19) AT ABUTMENT NO. 2 (BETWEEN ABUT. NO.2 & PABE) TO BE FILLED WITH MATERIAL FROM QUALIFIED PRODUCT LIST NO. 5, SECTION C. FIRST CLEAN OUT ALL DEBRIS IN JOINT AND PREPARE INSIDE FASCIAS AS PER MANUFACTURERS RECOMMENDATIONS.

⚠1 ⑮ NOTE: CONTRACTOR SHALL INSTALL #25 DOWEL BARS (610 IN LENGTH) INTO EXISTING PAVEMENT AT BRIDGE END SLAB. THE BAR SHALL BE EMBED 305 AND SEATED IN GROUT PER THE STANDARD SPECIIFICATIONS. COST OF ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION SHALL BE INCLUDED IN ITEM NO. 604M03.04.

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSeP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 5

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

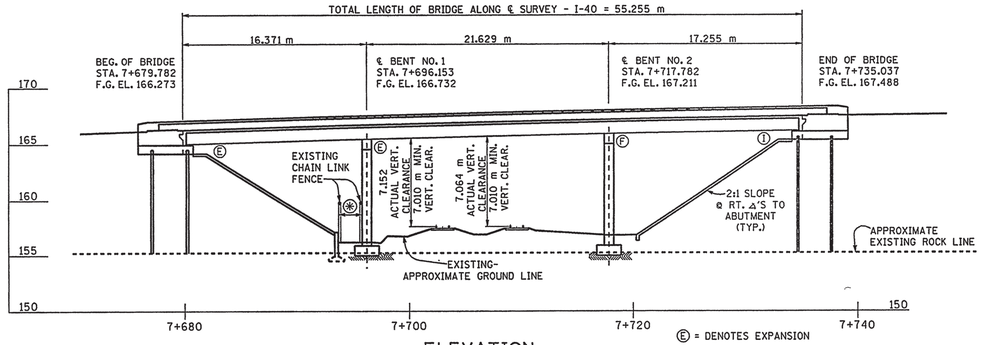
ESTIMATED QUANTITIES
WIDENING OF INTERSTATE 40 (EASTBOUND LANE) AND RAMP K OVER C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

HARDIE M. BROOKS JR. REGISTERED ENGINEER STATE OF TENNESSEE
10/17/02

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-83A

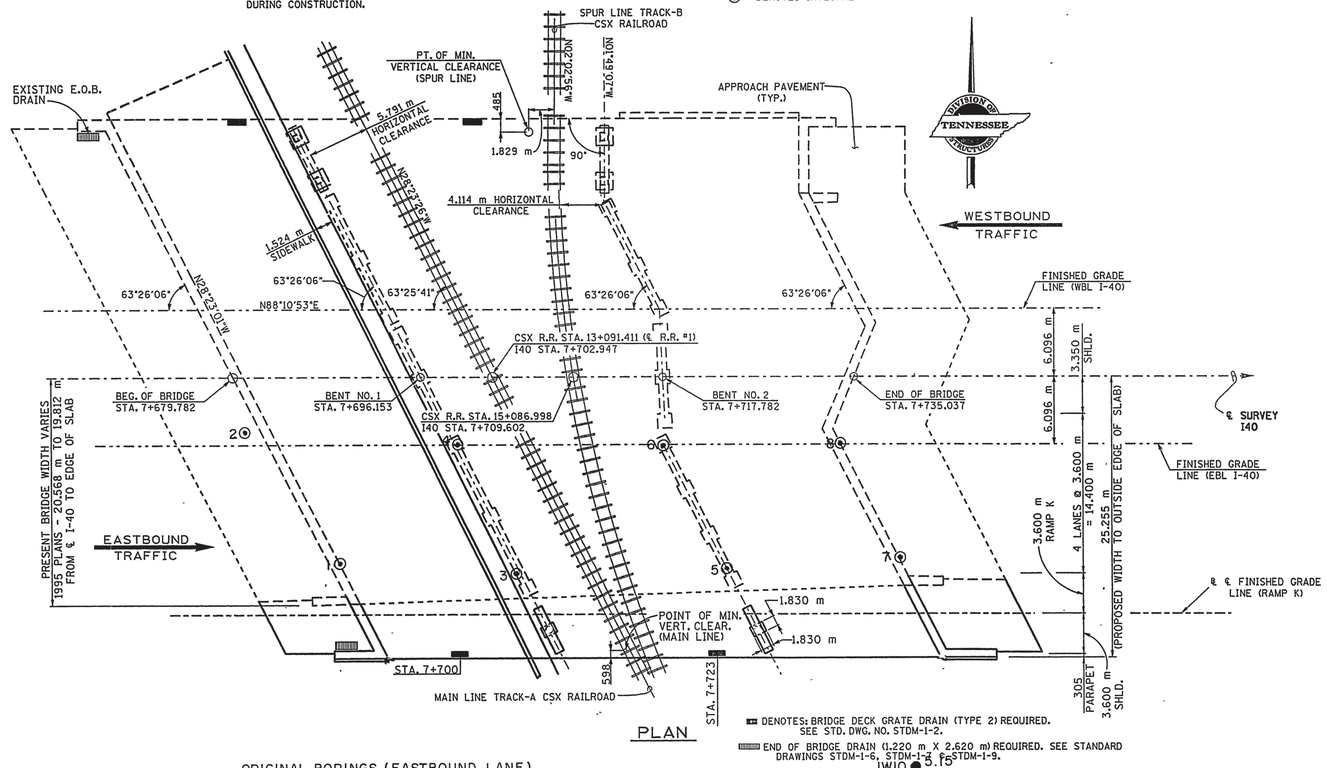
DAT121MR1.DGN



ELEVATION

✱DENOTES: PEDESTRIAN TRAFFIC ON SIDEWALK IS TO BE CLOSED DURING CONSTRUCTION.

Ⓔ = DENOTES EXPANSION
Ⓕ = DENOTES FIXED
Ⓘ = DENOTES INTEGRAL



PLAN

■ DENOTES: BRIDGE DECK GRATE DRAIN (TYPE 2) REQUIRED. SEE STD. DWG. NO. STDM-1-2.

▭ END OF BRIDGE DRAIN (1.220 m X 2.620 m) REQUIRED. SEE STANDARD DRAWINGS STDM-1-6, STDM-1-7 & STDM-1-9.

I ⊙ ORIGINAL BORINGS (EASTBOUND LANE)

CORE NO. IWIO ● 5.15 DEPTH DRILLED

IWIO ● 5.15

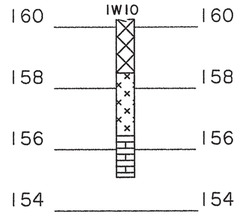
GROUND AND ROCK

I G. 160.05 / R 156.25

CLAY, SILTY (FILL SOIL)

LIMESTONE, BOULDERS AND SILTY CLAY FILL MATERIAL

LIMESTONE



NOTE:

BORING DEPICTIONS SHOWN OF FOUNDATION DATA SHEET INDICATE GENERAL SOIL AND ROCK TYPES AT THE SPECIFIC BORING LOCATIONS.

TO ASSIST IN BID PRERARATION FOR FOUNDATION CONSTRUCTION DETAILED ROCK AND SOIL DESCRIPTIONS AND, ON SOME PROJECTS, ROCK SAMPLES ARE AVAILABLE FOR INSPECTION AT THE MATERIALS AND TESTS HEADQUARTERS AT 6601 CENTENNIAL BLVD. NASHVILLE, TN. (615-350-4130)

ORIGINAL BORINGS (EASTBOUND LANE)

BORING	STATION	OFFSET	ROCK ELEVATION
1	7+689	15 RT	156.10
2	7+683	6 RT	156.20
3	7+704	16 RT	156.80
4	7+699	5 RT	156.75
5	NOT DRILLED		
6	NOT DRILLED		
7	7+739	15 RT	157.70
8	7+734	5 RT	157.60

P.E. NO. 19003-1181-44

HPP

PROJECT NO.	YEAR	SHEET NO.
IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	12-11-01	R.L.	REVISED STATIONS ℄ POINT 3 AND 4

NOTES:

REQUIRED:

1) SUFFICIENT GROUND, ROCK AND CORING INFORMATION FOR BRIDGE FOUNDATION.

2) APPROXIMATE EXISTING GROUND AND ROCK LINE.

BENCHMARKS:

1) B.M. #13
R.R. SPIKE IN POWER POLE
ELEV. = 162.761

2) B.M. #14
CHISELED SQ. CORNER OF HEADWALL
ELEV. = 173.365

NOTE: THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

NOTE: ALL DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS NOTED OTHERWISE.

BRIDGE NO. 5

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
FOUNDATION DATA
WIDENING OF INTERSTATE 40 (EASTBOUND LANE) AND RAMP "K"
OVER
C.S.X. RAILROAD
STATION 7+107.441
DAVIDSON COUNTY
2002

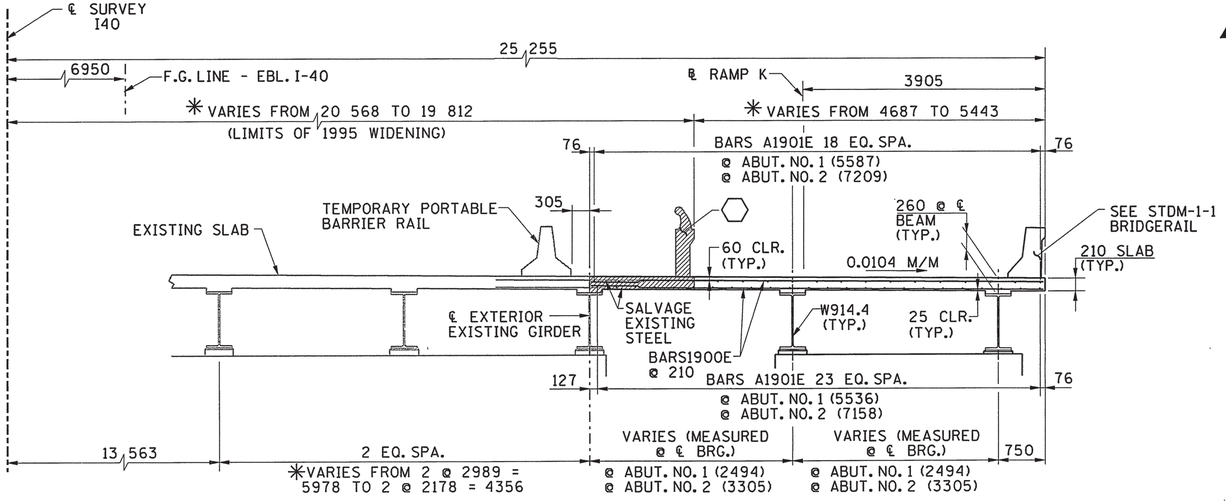
DESIGNED BY R. LEFEVRE DATE 12-01
DRAWN BY STEVEN STEELE DATE 12-01
SUPERVISED BY J.P. / R.L.H. DATE 12-01
CHECKED BY _____ DATE _____

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-84

(913201)

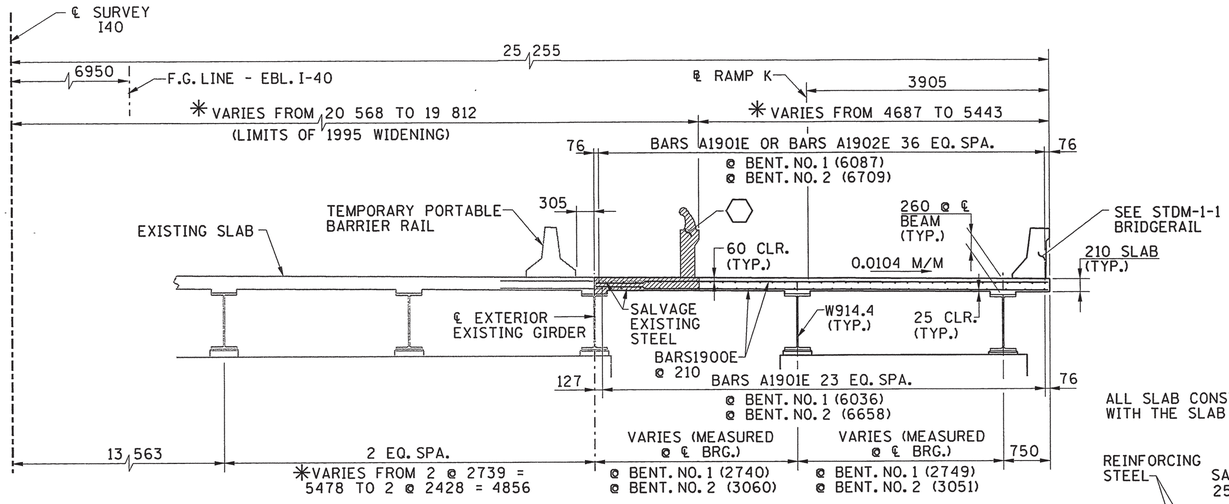
.DGN



TYPICAL CROSS SECTION @ ABUTMENTS-EBL

(LOOKING FOWARD ON SURVEY)
(FOR BAR DESIGNATION SEE MAIN REINFORCING PLAN)

✳ DENOTES @ BRIDGE END DIMENSIONS (LOOKING FORWARD ON SURVEY)
⬡ NOTE: CROSS HATCHED AREA TO BE REMOVED.
NOTE: DIAPHRAGMS @ SUPPORTS ARE NOT SHOWN.



TYPICAL CROSS SECTION @ BENTS-EBL

(LOOKING FOWARD ON SURVEY)
(FOR BAR DESIGNATION SEE MAIN REINFORCING PLAN)

✳ DENOTES @ BRIDGE END DIMENSIONS (RADIAL)
⬡ NOTE: CROSS HATCHED AREA TO BE REMOVED.
NOTE: DIAPHRAGMS @ SUPPORTS ARE NOT SHOWN.

⚠1 SUPERSTRUCTURE NOTES

NOTE : NO PORTION OF THE PARAPET SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.

NOTE : THE CONCRETE DECK SHALL NOT BE POURED UNTIL ALL STRUCTURAL STEEL IS ERECTED AND ALL WELDING AND/OR BOLTING COMPLETE.

NOTE : WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR PARAPET. THE PARAPET SHALL NOT BE POURED UNTIL THE SLAB IS POURED AND CURED. SEE STD. DWG. STDM-1-1.

APPROVAL OF MATERIALS: NO FAVRICATION SHALL BE STARTED UNTIL THE MATERIALS INVOLVED HAVE BEEN APPROVED BY THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERAILS AND TESTS.

IDENTITY OF MAIN MATERIALS: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS.

STRUCTURAL STEEL: SHALL CONFORM TO AASHTO M 270 (ASTM A709) GRADE 250 UNLESS OTHERWISE NOTED. ALL STRUCTURAL STEEL FOR GIRDER FLANGES IN TENSION AND ALL WEBS SHALL MEET THE SUPPLEMENTAL REQUIREMENTS FOR LONGITUDINAL CHARPY V-NOTCH TESTS SPECIFIED IN AASHTO MATERIAL SPECIFICATIONS. ZONE 2 OF NON-FRACTURE CRITICAL CRITERIA SHALL APPLY.

WELDING: ANSI/AASHTO/AWS D1.5-95 BRIDGE WELDING CODE AND SECTION 602 OF THE STANDARD SPECIFICATIONS.

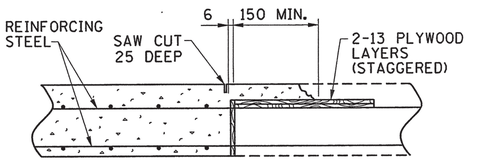
ADDITIONAL SHOP SPLICE NOTE: SHOP SPLICES NECESSARY DUE TO LENGTHS OR SIZE OF MATERIAL INVOLVED MAY BE ADDED BY THE FABRICATOR SUBJECT TO APPROVAL BY THE ENGINEER AND SHALL BE AT NO ADDITIONAL COST TO THE PROJECT.

ADDITIONAL FIELD SPLICE NOTE: FIELD SPLICES NECESSARY DUE TO LENGTHS INVOLVED MAY BE ADDED BY THE FABRICATOR SUBJECT TO APPROVAL BY THE ENGINEER AND SHALL BE AT NO ADDITIONAL COST TO THE PROJECT.

SHOP ASSMEBLY: PROGRESSIVE SHOP ASSEMBLY WILL BE ALLOWED. SEE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, ART. 11.5.3.1 DIVISION II.

NOTE: THE CONTRACTOR SHALL SAW .025 METER DEEP INTO THE SLAB BEFORE REMOVING CONCRETE ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE. WHEN PRACTICAL ALL PROPOSED (NEW) TRANSVERSE REINFORCING STEEL TO BE SPLICED TO EXISTING. THE CONTRACTOR SHALL NOT USE A HYDRAULIC RAM MODIFIED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILAR HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM ALLOWABLE HAMMER SIZE IS THE 27KG CLASS.

ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE SLAB CONSTRUCTION JOINT DETAIL SHOWN BELOW.



SLAB CONSTRUCTION JOINT DETAIL

(N.T.S.)

DECK CONCRETE POURING SEQUENCE: SLAB CONSTRUCTION JOINTS MAY BE LOCATED AT THE CONTRACTOR'S OPTION SUBJECT TO THE FOLLOWING:
1) NO CONSTRUCTION JOINT MAY BE LOCATED CLOSER THAN 3 METERS OR FURTHER THAN 5 METERS FORM AN INTERIOR SUPPORT.
2) THE SLAB IN THE MIDDLE SECTION OF BOTH ADJACENT SPANS MUST BE POURED TO WITHIN AT LEAST 5 METERS OF THE SUPPORTS EITHER PRIOR TO OR CONCURRENTLY WITH THE SLAB OVER AN INTERIOR SUPPORT.

ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE "SLAB CONSTRUCTION JOINT DETAIL" SHOWN ABOVE.

⚠1 ESTIMATED QUANTITIES

CLASS "D" CONCRETE (BRIDGE DECK) M^3	EPOXY COATED REINFORCING STEEL (BRIDGES) KG
70	8172

DIVISION OF METRIC STRUCTURES

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	REV. NOTES & QUANTITIES

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

HARDIE M. BROOKS JR. 18827 REGISTERED PROFESSIONAL ENGINEER STATE OF TENNESSEE
Hardie M. Brooks II 11/26/02

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-85

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSeP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

dgnspec
07-30-02
rmcdonald

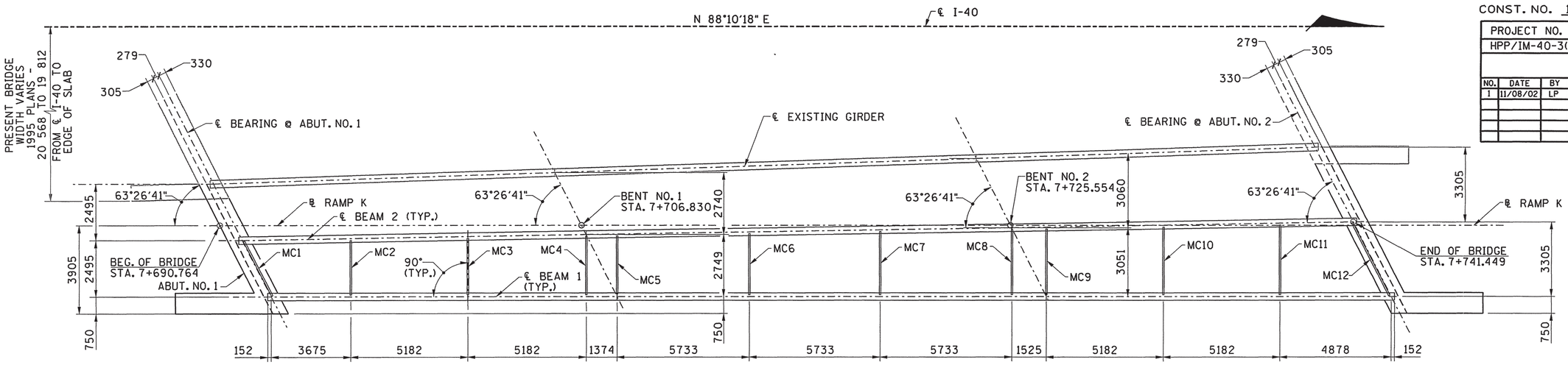
.DGN

CONST. NO. 19003-3187-44

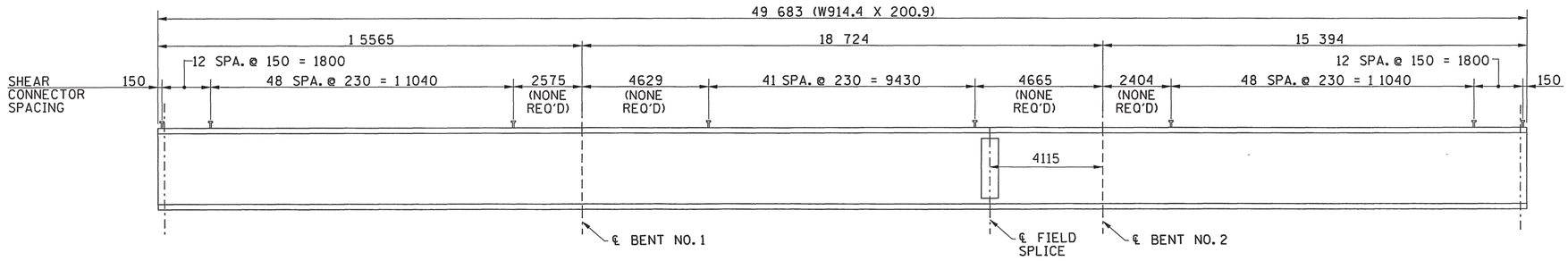
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

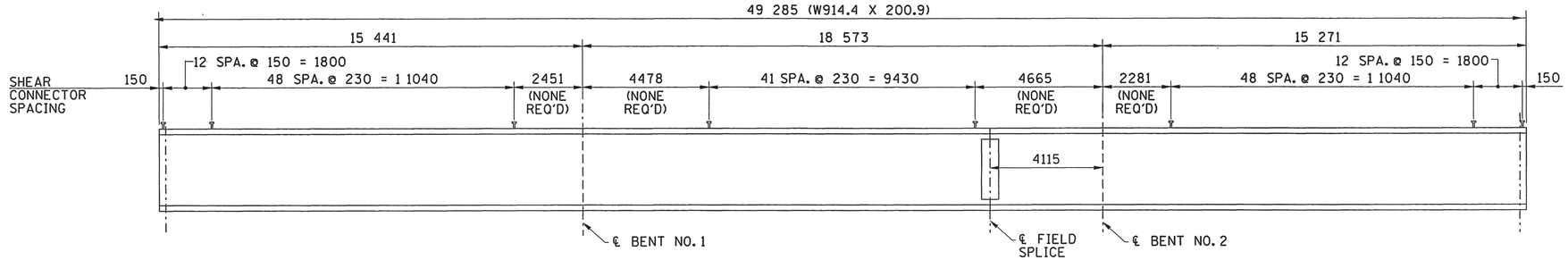
NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	ADD NOTES



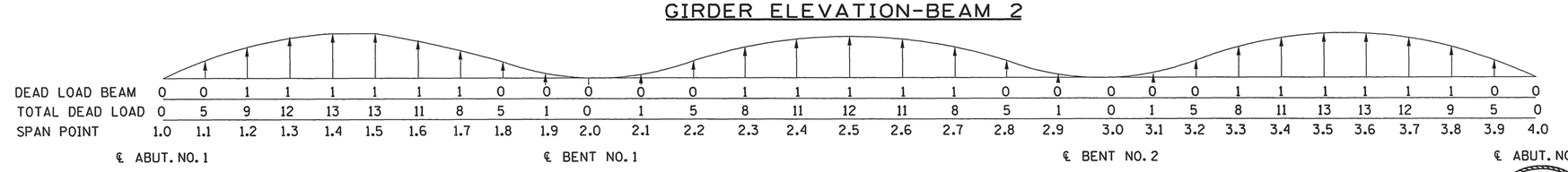
FRAMING PLAN



GIRDER ELEVATION-BEAM 1



GIRDER ELEVATION-BEAM 2



CAMBER TABLE-BEAM 1 AND 2

DEAD LOAD CORRECTION CURVE: GIRDERS SHALL BE CAMBERED TO COMPENSATE FOR DEAD LOAD DEFLECTION AND VERTICAL CURVE.

IF PRESTRESSED DECK PANELS ARE USED AND THE BEAMS ARE PROFILED AFTER PANELS ARE IN PLACE, REDUCE THE DEAD LOAD CORRECTION VALUES SHOWN BY 25%

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSeP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 11/08/02

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-86

.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
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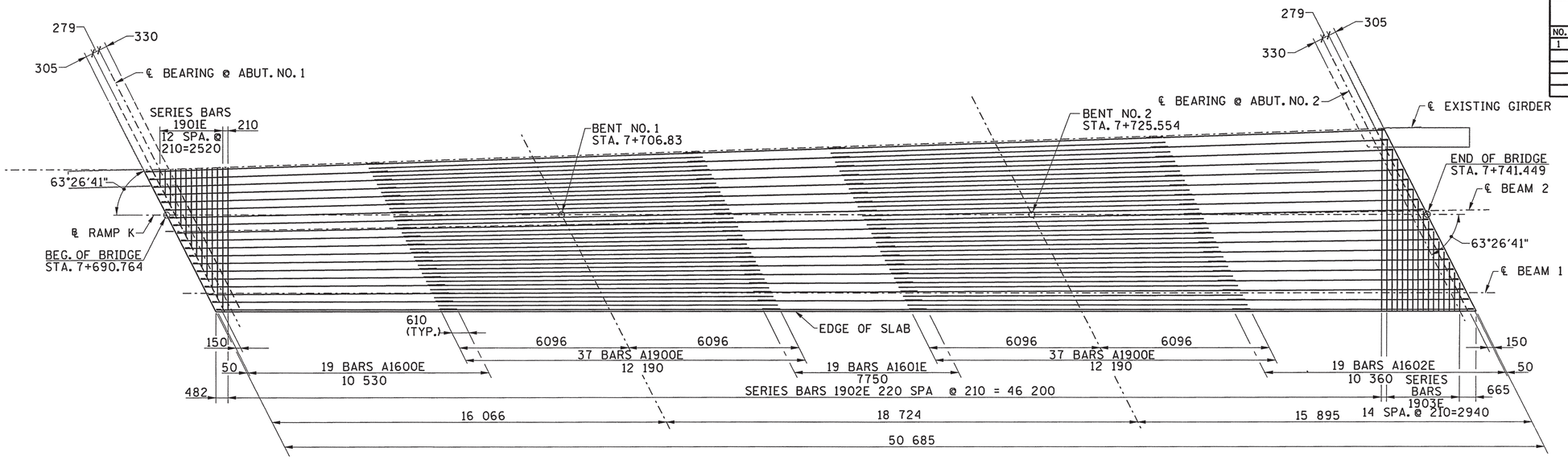
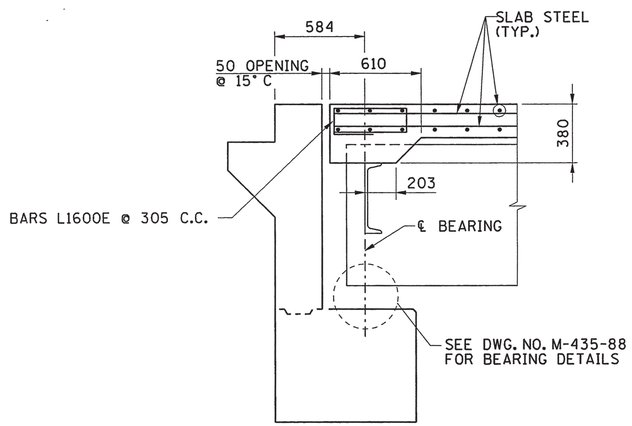
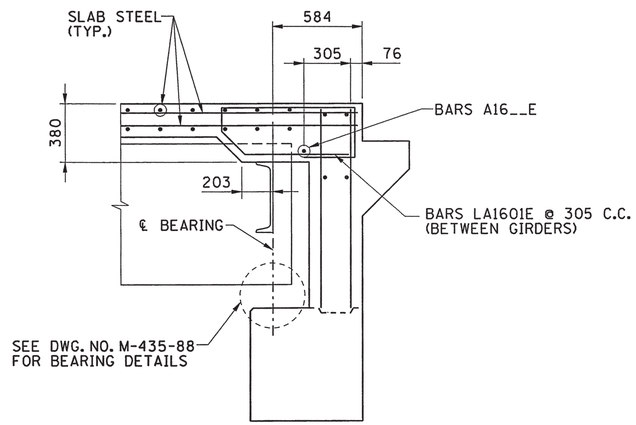


PLAN OF MAIN REFORCING



ABUT. NO. 1 ENDWALL SECTION
(EXPANSION)



ABUT. NO. 2 ENDWALL SECTION
(INTERGRAL)

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSEP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

1 SUPERSTRUCTURE DETAILS
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19100400039
DAVIDSON COUNTY
2002

HAROLD M. BROOKS JR. REGISTERED ENGINEER STATE OF TENNESSEE
11 Jan 02

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-87

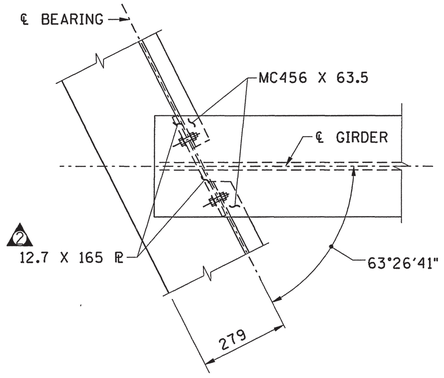
.DGN

CONST. NO. 19003-3187-44

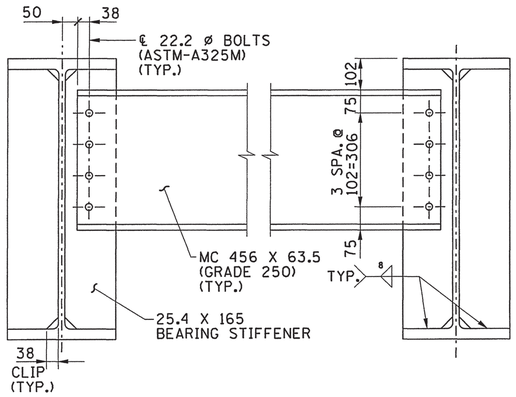
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	GENERAL REVISIONS
2	05/14/03	LP	GENERAL REVISIONS

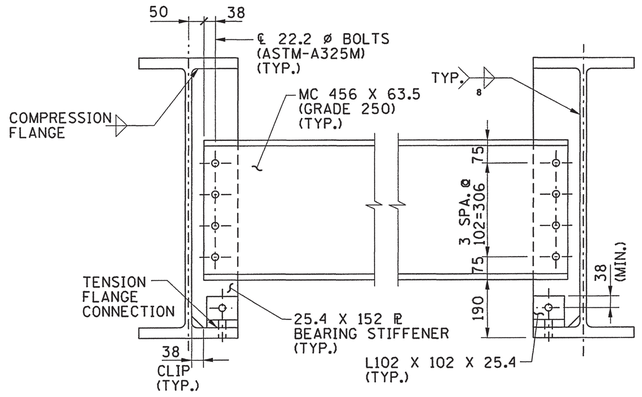


BEARING DETAIL



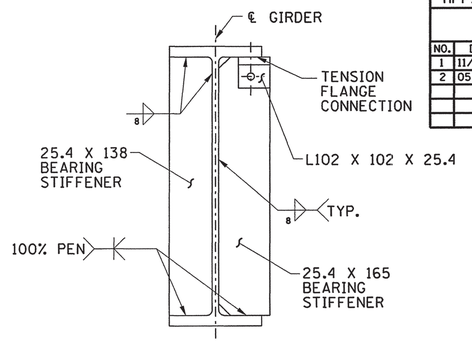
DIAPHRAGM DETAIL CONNECTION

(MC1, MC2, MC6, MC7, MC11, AND MC12- SEE FRAMING PLAN FOR CHANNEL DESIGNATION)

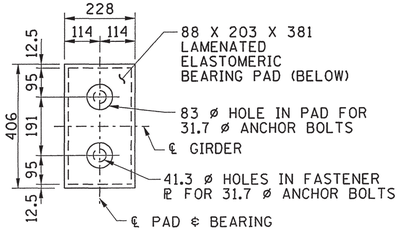


INTERMEDIATE DIAPHRAGM DETAIL CONNECTION

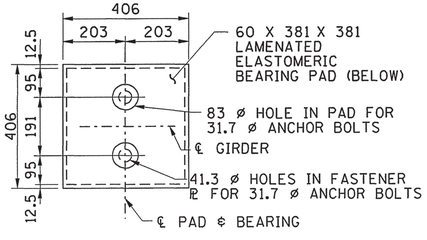
(MC3, MC4, MC5, MC8, MC9, AND MC10- SEE FRAMING PLAN FOR CHANNEL DESIGNATION)



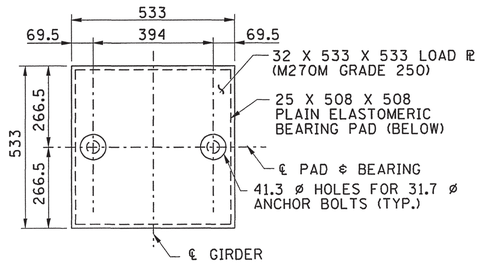
GIRDER DETAIL @ BENTS



PLAN



PLAN



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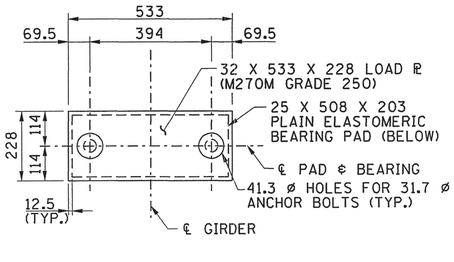
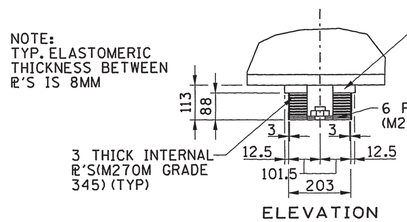


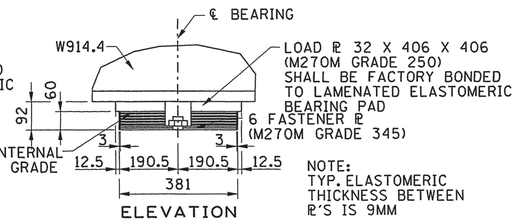
PLAN



ELEVATION

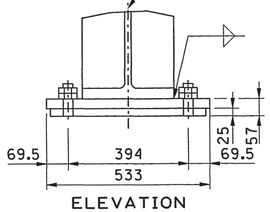
BEARING DETAIL @ ABUT. NO. 1

SCALE: 1:10



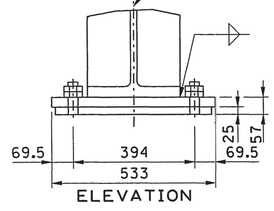
ELEVATION

BEARING DETAIL @ BENT NO. 1



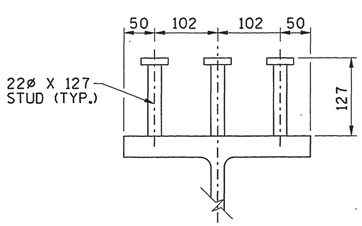
ELEVATION

BEARING DETAIL @ BENT NO. 2



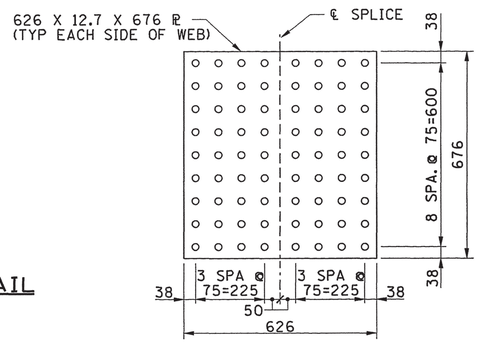
ELEVATION

BEARING DETAIL @ ABUT. NO. 2

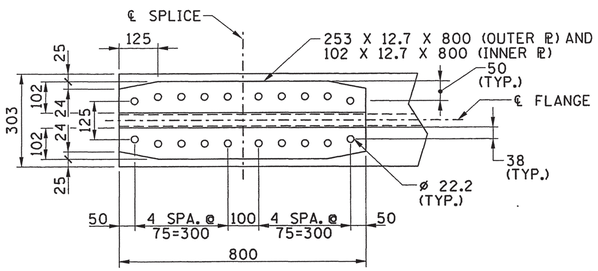


SHEAR CONNECTOR DETAIL

SCALE: 1:5



WEB SPLICE DETAIL



TOP AND BOTTOM FLANGE SPLICE DETAIL

FIELD CONNECTIONS: SHALL BE 22.2 ø HIGH TENSILE STRENGTH BOLTS ASTM-A325M(OR ASTM A490M) UNLESS OTHERWISE NOTED. SEE AASHTO SPECIFICATION) ART. 11.3.2 DIVISION II & SECTION 602 OR THE STANDARD SPECIFICATION.

FIELD CONNECTIONS: SHALL BE 22.2 ø HIGH TENSILE STRENGTH BOLTS ASTM-A325M(OR ASTM A490M) UNLESS OTHERWISE NOTED. SEE AASHTO SPECIFICATION) ART. 11.3.2 DIVISION II & SECTION 602 OR THE STANDARD SPECIFICATION.

DESIGNED BY	L. PERRY	DATE	9-02
DRAWN BY	GSeP	DATE	9-02
SUPERVISED BY	TAK / HMB	DATE	9-02
CHECKED BY	L. PERRY	DATE	9-02

GREENHAM SMITH AND PARTNERS

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 5

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

1 SUPERSTRUCTURE DETAILS

WIDENING OF INTERSTATE 40 (EASTBOUND LANE) AND RAMP K OVER C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

CHARLIE M. BROOKS, JR. 15163 REGISTERED ENGINEER STATE OF TENNESSEE

CORRECT Edward P. Wasserman ENGINEER OF STRUCTURES

M-435-88

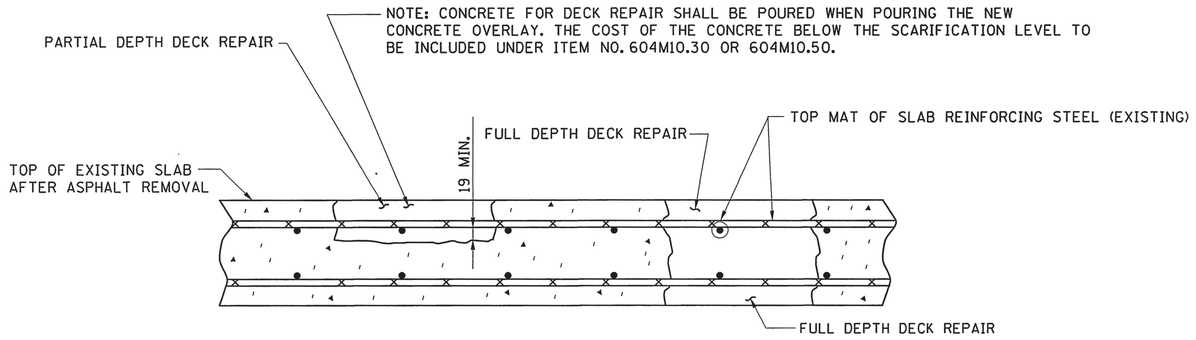
.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	REMOVED NOTE



DETAIL SHOWING FULL AND PARTIAL DEPTH DECK REPAIR

BRIDGE DECK REPAIR SCHEDULE	
ITEM NO. 604M10.50 M^2 (PARTIAL DEPTH OF SLAB)	ITEM NO. 604M10.30 M^2 (FULL DEPTH OF SLAB)
20	10

REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF 19 BELOW THE TOP BAR OF THE TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE COMPLETELY CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE BRIDGE REPAIR OFFICE.

INSPECTIONS TO DETERMINE AREAS OF DECK REPAIR SHALL BE SCHEDULED WITH THE BRIDGE REPAIR OFFICE AT LEAST THREE (3) DAYS IN ADVANCE.

DECK REPAIR WILL BE PAID FOR UNDER ITEM NO. 604M10.50 BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), AND ITEM NO. 604M10.30 BRIDGE DECK REPAIR (FULL DEPTH OF SLAB).

DURING PARTIAL DEPTH REPAIRS, SHOULD DETERIORATED CONCRETE BE ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB, THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604M10.30.

POWER DRIVEN HAND TOOLS USED FOR THE REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL AND FULL DEPTH REPAIRS ARE SUBJECT TO THE FOLLOWING RESTICTIONS:

1. (PARTIAL DEPTH REPAIRS) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 27kg CLASS SHALL NOT BE USED.
2. (FULL DEPTH REPAIRS) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 41kg CLASS SHALL NOT BE USED. ALSO ALL DECK REPAIR OVER BEAMS WILL BE RESTRICTED TO 27kg PNEUMATIC HAMMERS.
3. CHIPPING HAMMERS OF THE 7kg CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.
4. TRAFFIC CONTROL SHALL BE PROVIDED FOR TRAFFIC BELOW BRIDGE DURING PARTIAL AND FULL DEPTH DECK REPAIR.

NOTE: ITEM NO. 604M10.30 AND 604M10.50 SHALL BE BID WITH THE CONTINGENCY THAT THESE ITEMS MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER.

NOTE: ON PREVIOUSLY OVERLAYED STRUCTURES, THE CONTRACTOR SHALL BE ADVISED THAT HE WILL LIKELY ENCOUNTER MORE THAN TWO LAYERS OF REINFORCEMENT. COST TO COMPLETE FULL DEPTH DECK REPAIR SHALL TAKE INTO ACCOUNT THIS POSSIBLITY.

DIVISION OF STRUCTURES METRIC

BRIDGE NO. 5

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

WIDENING OF INTERSTATE 40 (EASTBOUND LANE) AND RAMP K OVER C.S.X. RAILROAD

STATION 7+707.441

LOG MILE 13.65

BRIDGE I.D. NO. 19I00400039

DAVIDSON COUNTY

2002

HARDIE M. BROOKS, JR. Registered Engineer AGRICULTURE No. 11/08/02 STATE OF TENNESSEE

CORRECT Edward P. Wasserman ENGINEER OF STRUCTURES

M-435-89

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSeP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

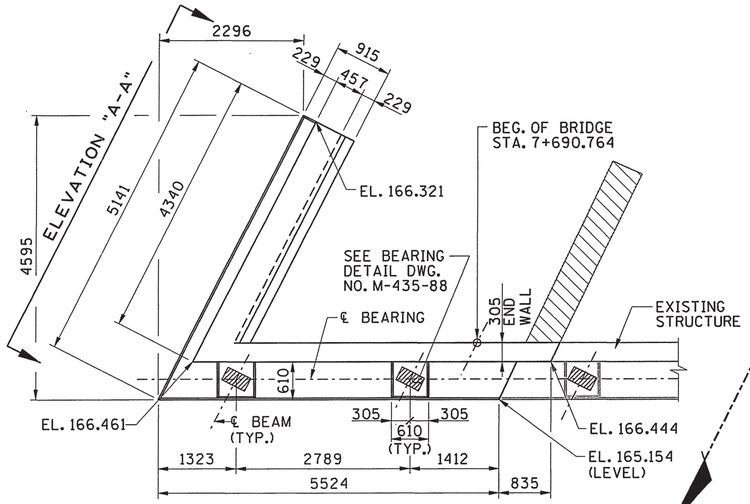
.DGN

CONST. NO. 19003-3187-44

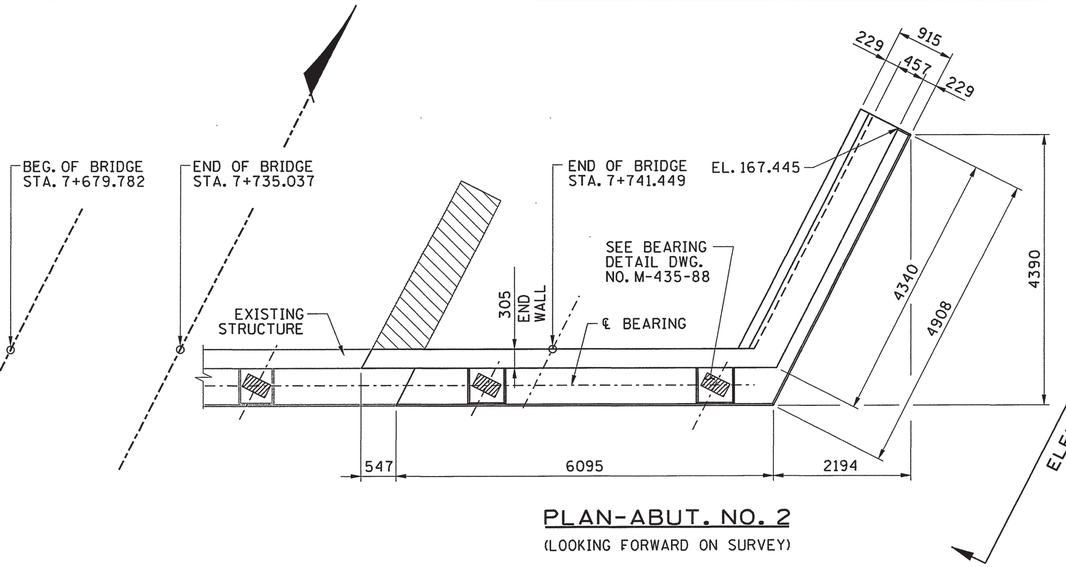
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

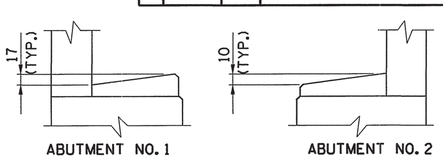
NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	REVISED ELEVATIONS & QUANTITIES



PLAN-ABUT. NO. 1
(LOOKING BACK ON SURVEY)



PLAN-ABUT. NO. 2
(LOOKING FORWARD ON SURVEY)



RISER BLOCK SLOPE DETAILS

NOTES:

WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING DOWEL BARS. IF THE CONTRACTOR ELECTS TO DRILL HOLES FOR THE DOWEL BARS, THE REINFORCING STEEL SHALL BE PLACED NOT TO INTERFER WITH THE DRILLING. DOWEL BARS PROJECTION 305M.

RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

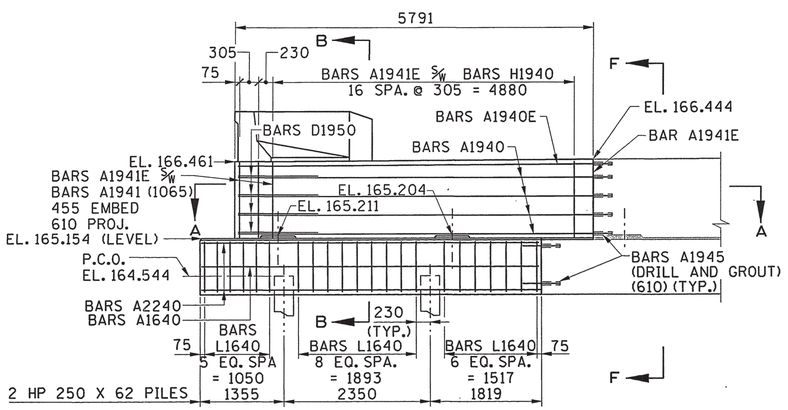
WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOST AND PARAPETS. FOR DETAILS OF WINGPOSTS AND PARAPET, SEE STD. DWG. NO. STDM-1-1.

THE GIRDERS SHALL BE IN PLACE PRIOR TO POURING THE ABUTMENT NO.1 BACKWALL. AT LEAST THE TOP 305 OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE EXPANSION JOINT CLOSURE POUR.

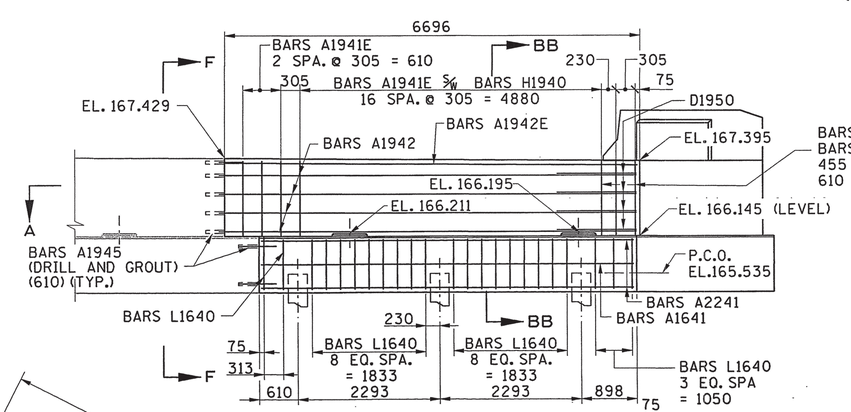
COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE BRIDGE RAIL SYSTEM.

WINGBEAM PILES (MAXIMUM LENGTH OF 6100M) SHALL BE DRIVEN TO THE PLANS TIP ELEVATION OR REFUSAL.

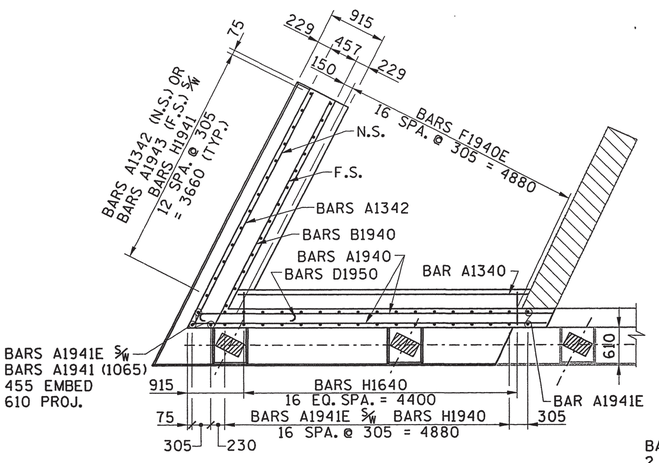
WHEN POURING ABUTMENT BEAM, PROVISIONS SHALL BE MADE FOR SETTING DOWEL BARS. IF THE CONTRACTOR ELECTS TO DRILL HOLES FOR THE DOWEL BARS, THE REINFORCING STEEL SHALL BE PLACED NOT TO INTERFER WITH THE DRILLING. DOWEL BARS PROJECTION 305M.



ABUTMENT NO. 1 ELEVATION VIEW

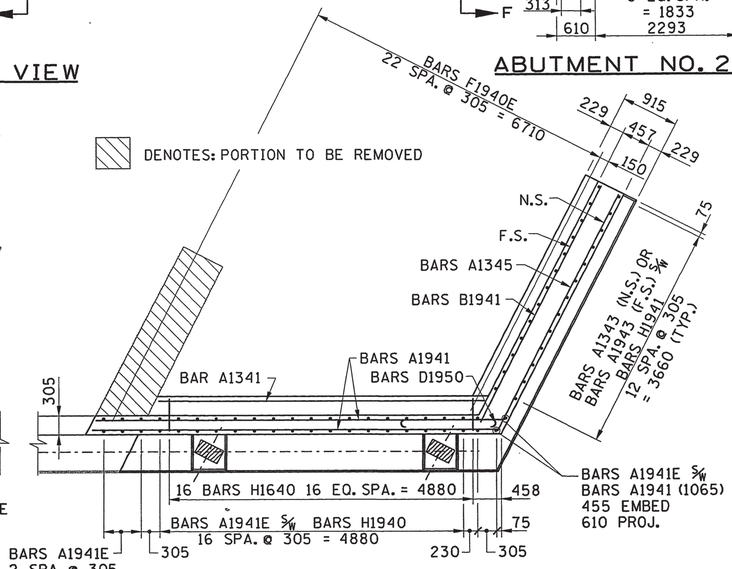


ABUTMENT NO. 2 ELEVATION VIEW



PLAN-ABUT. NO. 1
(LOOKING BACK ON SURVEY)

DENOTES: PORTION TO BE REMOVED



PLAN-ABUT. NO. 2
(LOOKING FORWARD ON SURVEY)

ESTIMATED QUANTITIES

	CLASS "A" CONCRETE (BRIDGES) M^3	STEEL BAR REINFORCEMENT (BRIDGES) KG	EPOXY COATED REINFORCING STEEL (BRIDGES) KG
ABUT. NO. 1	12	906	213
ABUT. NO. 2	20	949	237

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSeP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

HARDIE M. BROOKS, JR. 23 REGISTERED ENGINEER STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DIVISION OF METRIC STRUCTURES

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

1 ABUTMENT NO. 1 & 2
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19100400039
DAVIDSON COUNTY
2002

M-435-90

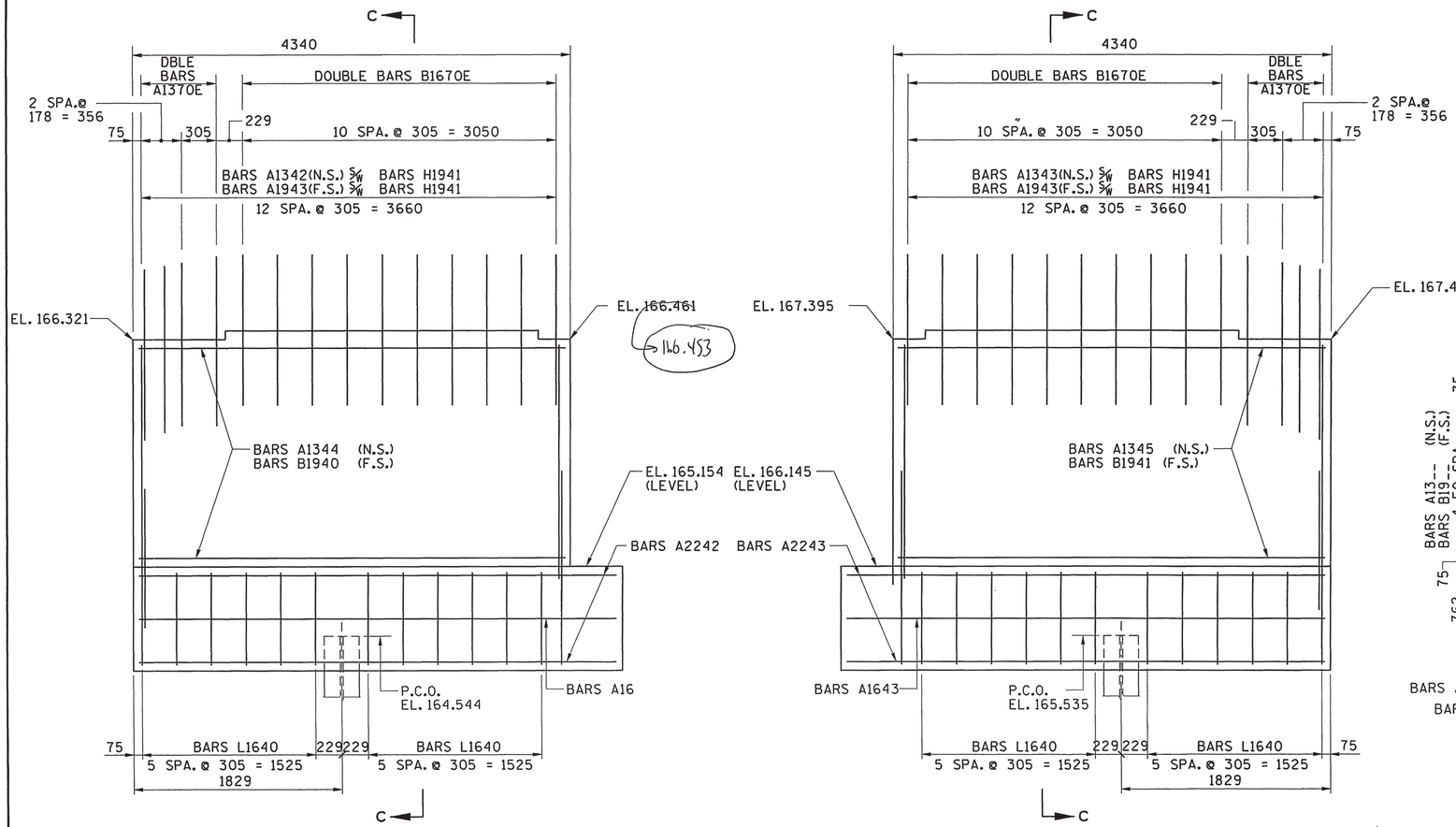
.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

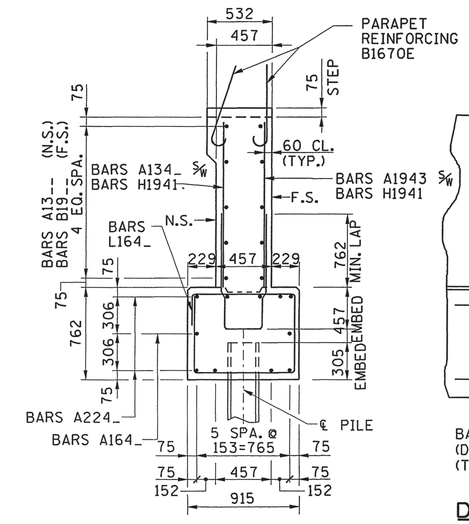
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	GENERAL REVISIONS

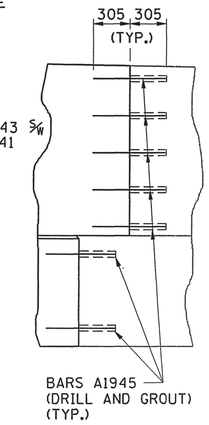


ELEVATION "A-A"

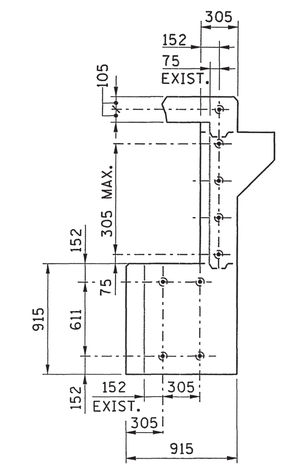
ELEVATION "C-C"



SECTION "C-C"



DETAIL "E"



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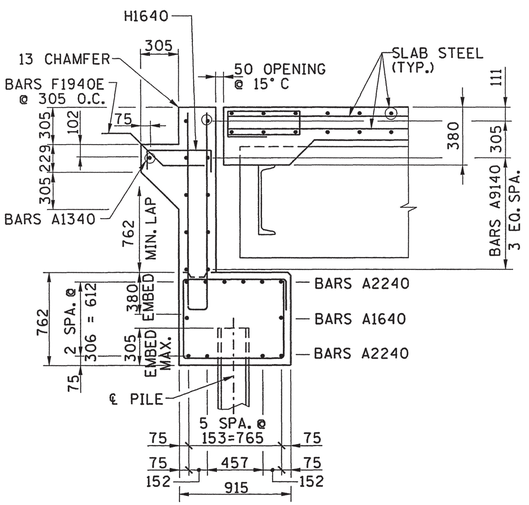
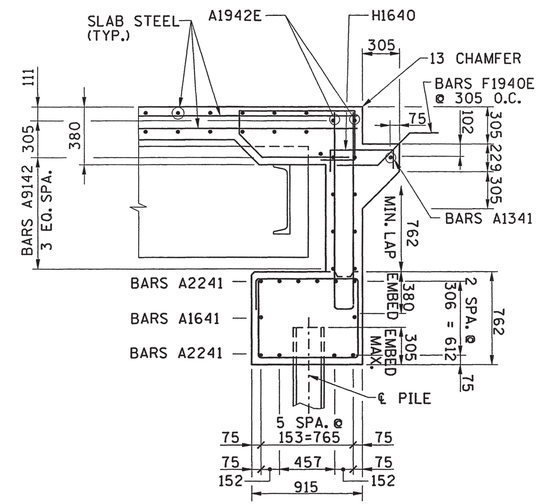


ABUT. NO. 1 ENDWALL SECTION (EXPANSION)

SECTION "B-B"



ABUT. NO. 2 ENDWALL SECTION (INTERGRAL)

SECTION "BB-BB"

BRIDGE NO. 5

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

1 ABUTMENT NO. 1 & 2 DETAILS
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

HARDIE M. BROOKS, JR. STATE OF TENNESSEE 11/08/02

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-91

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GS&P DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

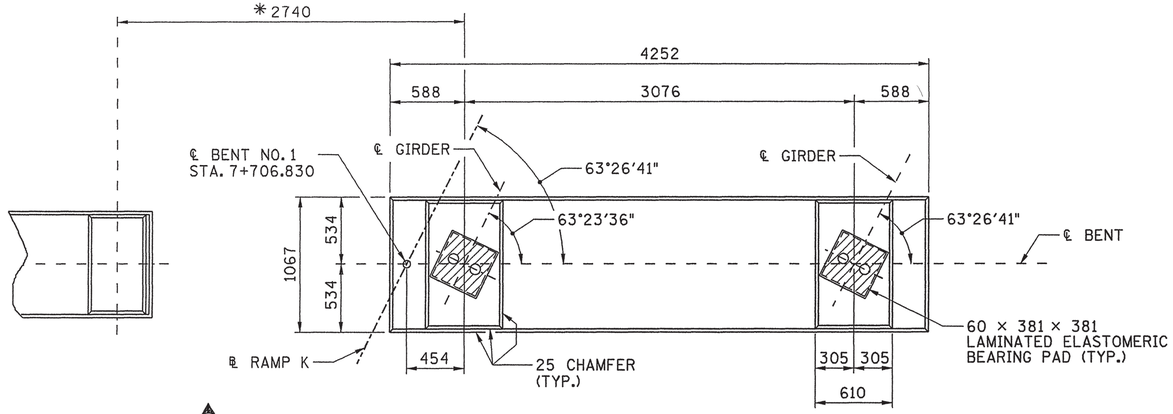
GRESHAM SMITH AND PARTNERS

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

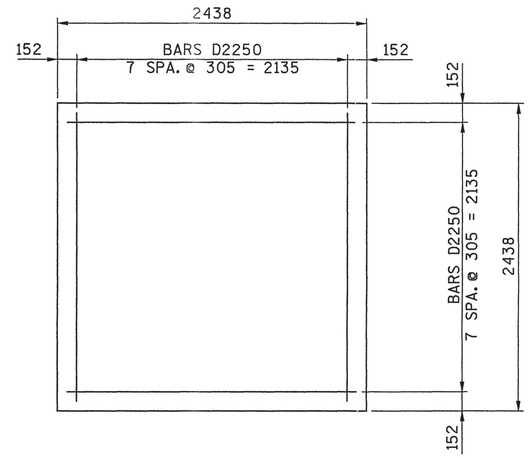
REVISIONS

NO	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	GENERAL REVISIONS
2	06/01/04	LP	ADDED NOTE

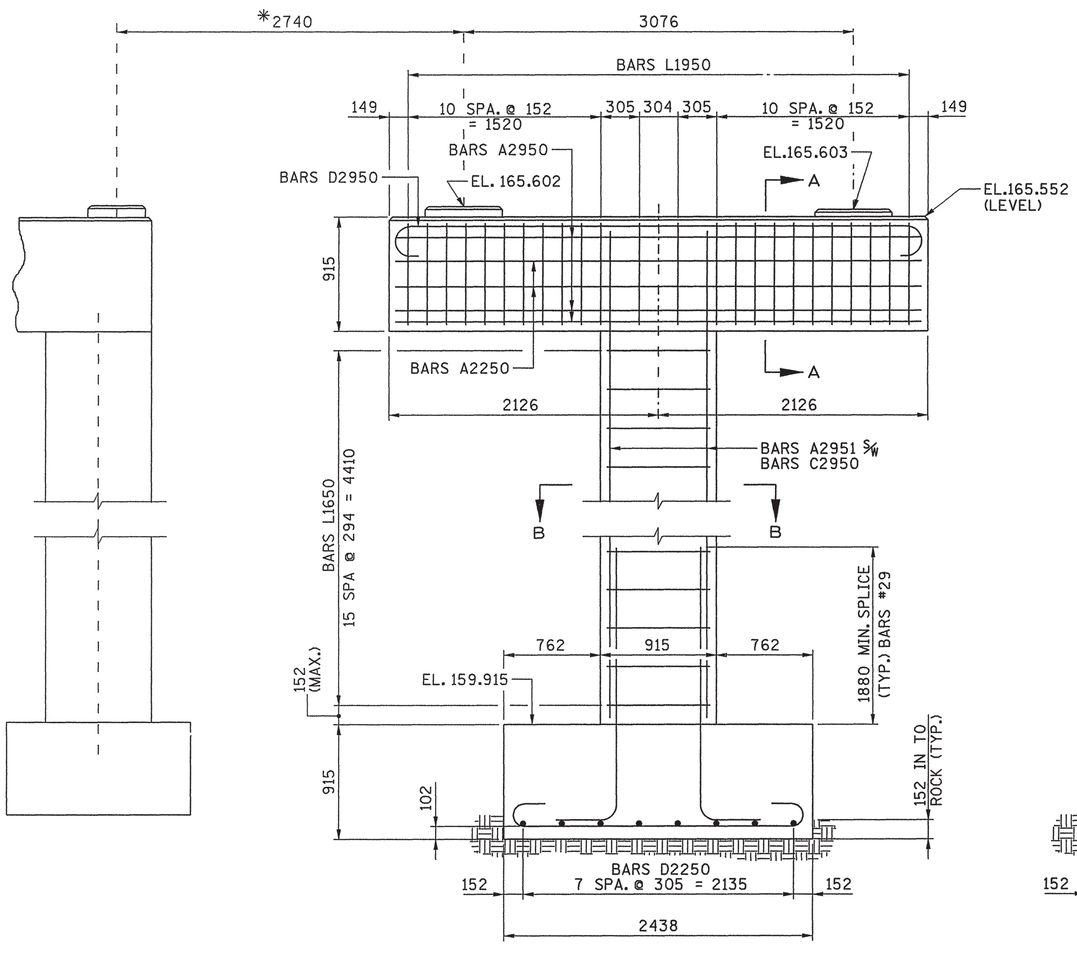


PLAN

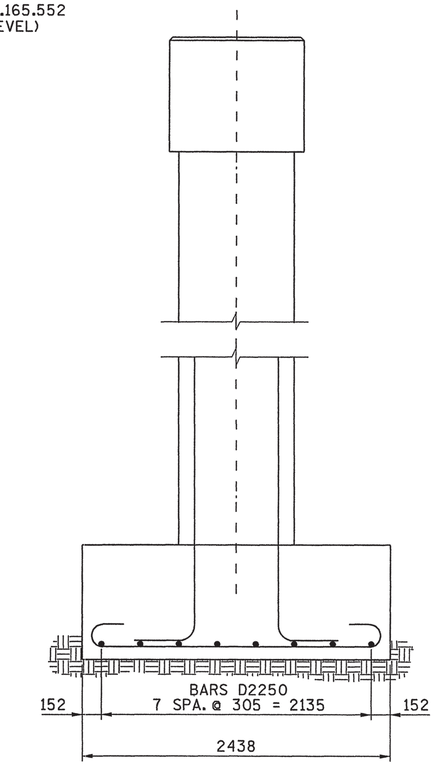
* DENOTES : DIMENSION SUPERCEDED BY VALUE SHOWN ON DWG. NO. M-435-92A.



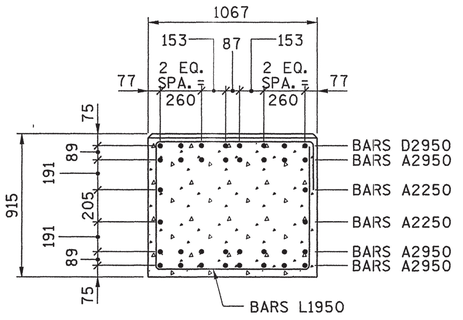
FOOTING PLAN



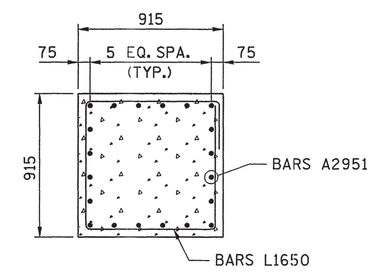
ELEVATION



SIDE ELEVATION



SECTION "A-A"



SECTION "B-B"

GENERAL NOTES

NOTES:
WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING STDM-6-1. BOLT PROJECTION 280.

RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM. COLUMN STEEL TO EXTEND 763 INTO CAP BEAM.

ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) M^3	STEEL BAR REINFORCEMENT (BRIDGES) Kg
14	2038

NOTE: QUANTITIES BASED ON TOP OF FOOTING AT EL. 159.915 COLUMN REINFORCING STEEL SHALL NOT BE ORDERED UNTIL TOP OF FOOTING ELEVATION IS ESTABLISHED.

DIVISION OF STRUCTURES METRIC

HARDIE M. BROOKS, JR. REGISTERED ENGINEER AND ARCHITECT STATE OF TENNESSEE 6/21/04

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

1 BENT NO. 1
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

CORRECT Edward P Wasserman
ENGINEER OF STRUCTURES

M-435-92

DESIGNED BY	L. PERRY	DATE	9-02
DRAWN BY	GS&P	DATE	9-02
SUPERVISED BY	TAK / HMB	DATE	9-02
CHECKED BY	L. PERRY	DATE	9-02

GRESHAM SMITH AND PARTNERS

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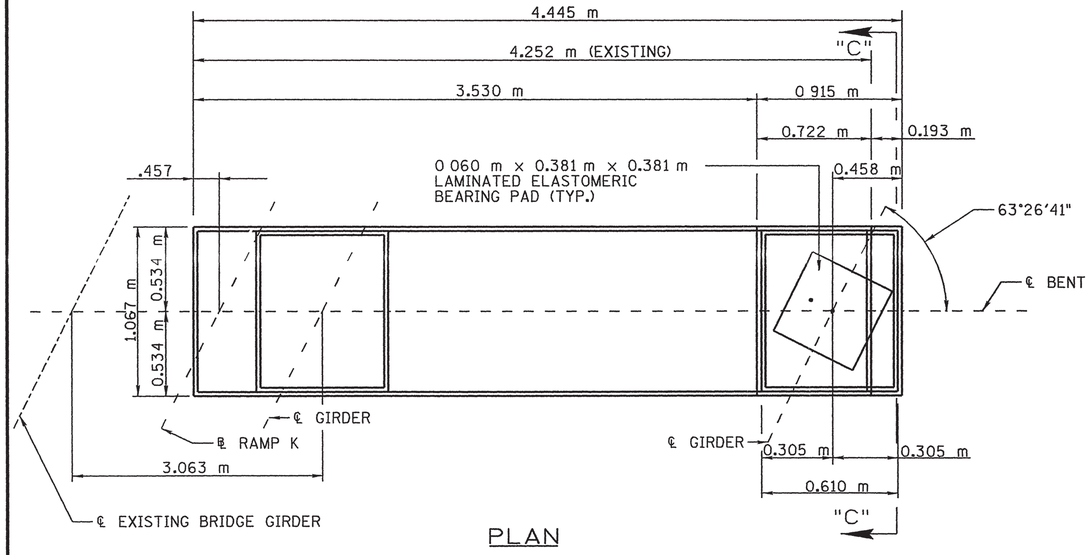
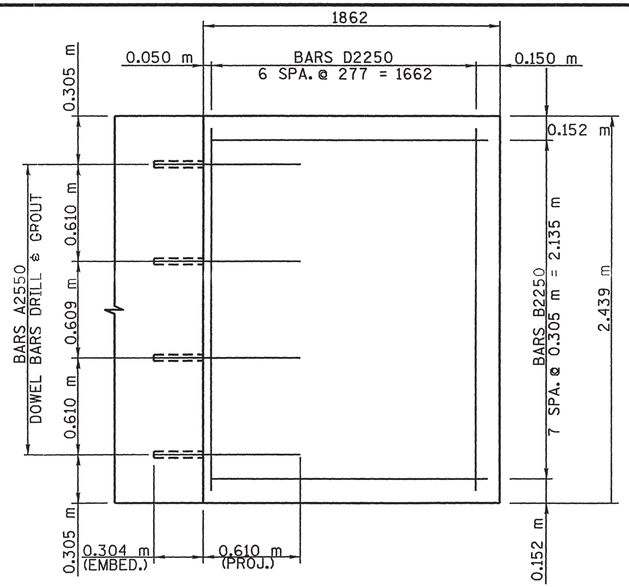
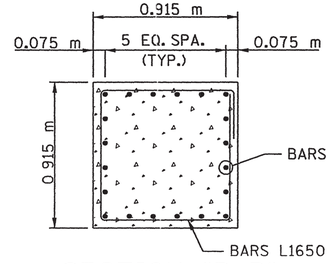


PLAN



PLAN OF FOOTING



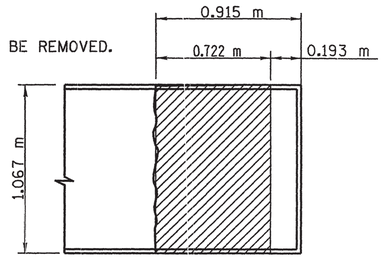
SECTION "B-B"

CONST. NO.	19003-3187-44	
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2004	

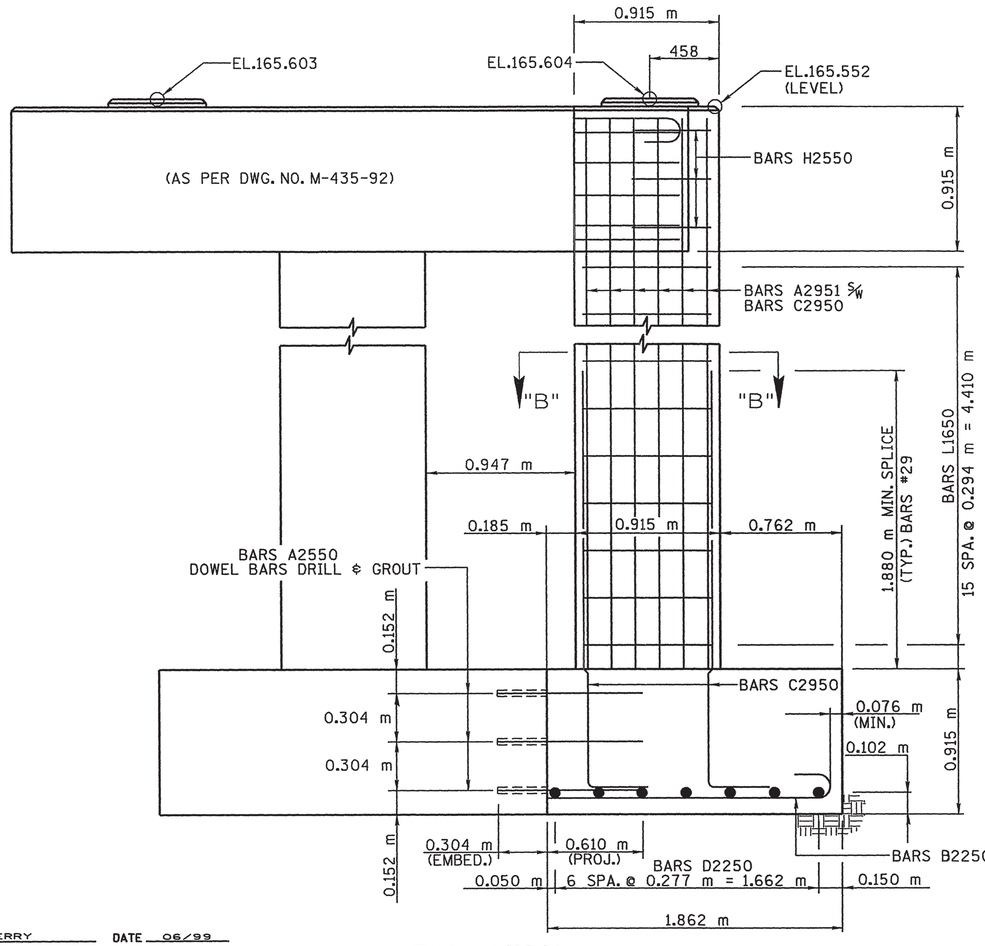
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	6-01-04	HMB	WIDENNING OF BENT

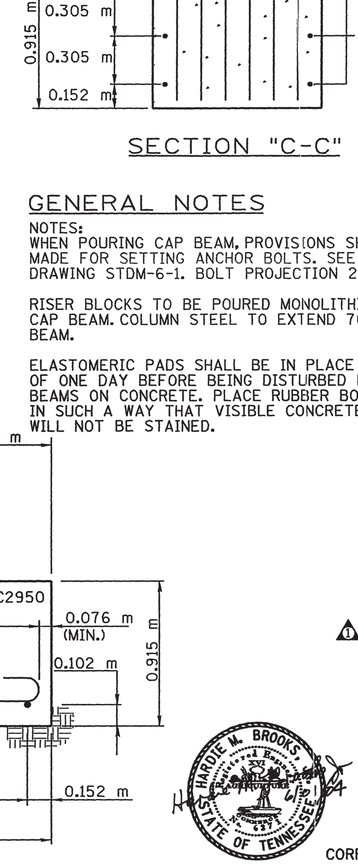
NOTE : HATCHED AREA DENOTES PORTION TO BE REMOVED.



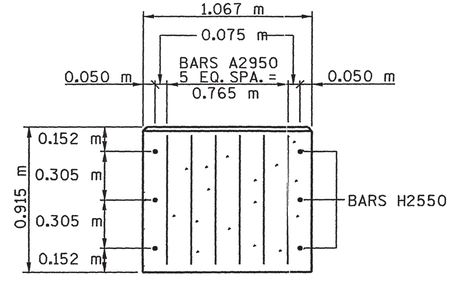
PLAN



ELEVATION



END ELEVATION



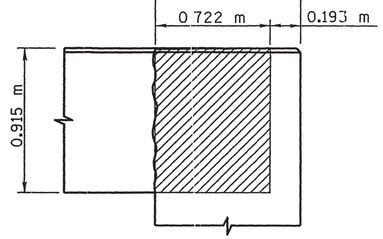
SECTION "C-C"

GENERAL NOTES

NOTES:
WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING STDM-6-1. BOLT PROJECTION 280.

RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM. COLUMN STEEL TO EXTEND 763 INTO CAP BEAM.

ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.



ELEVATION
SHOWING REMOVAL

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) M^3	STEEL BAR REINFORCEMENT (BRIDGES) Kg
23	4532

DIVISION OF METRIC STRUCTURES

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BENT NO. 1
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
DAVIDSON COUNTY
2004

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

HARDIE M. BROOKS — REGISTERED ENGINEER — STATE OF TENNESSEE

DESIGNED BY	L. PERRY	DATE 06/99
DRAWN BY	FRANK F. FROST	DATE 05/04
SUPERVISED BY	HMB / R.L.H.	DATE 05/04
CHECKED BY		DATE

M-435-92A

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07-30-2004
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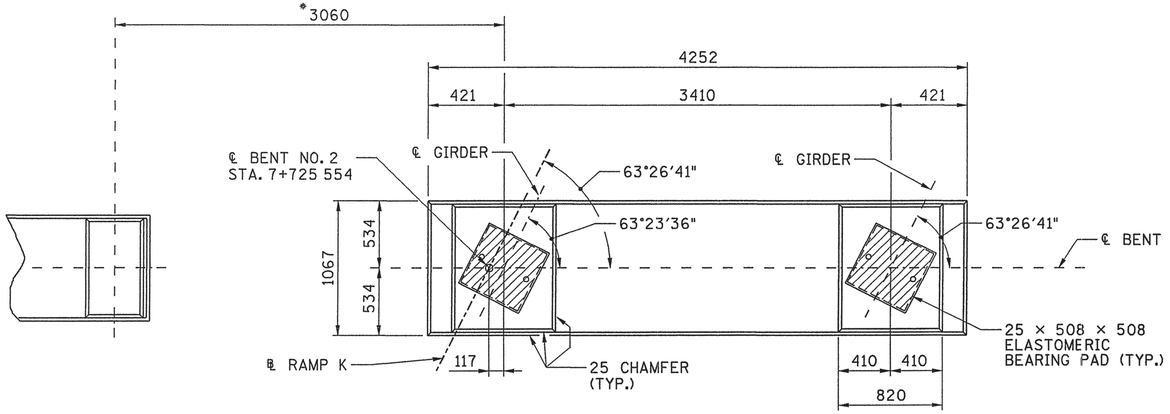
CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

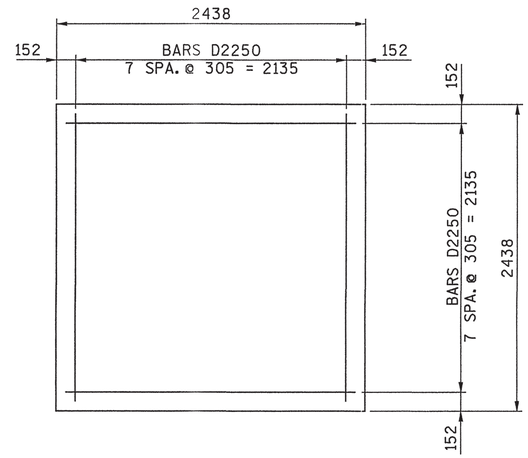
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	GENERAL REVISIONS
2	06/01/04	LP	ADDED NOTE

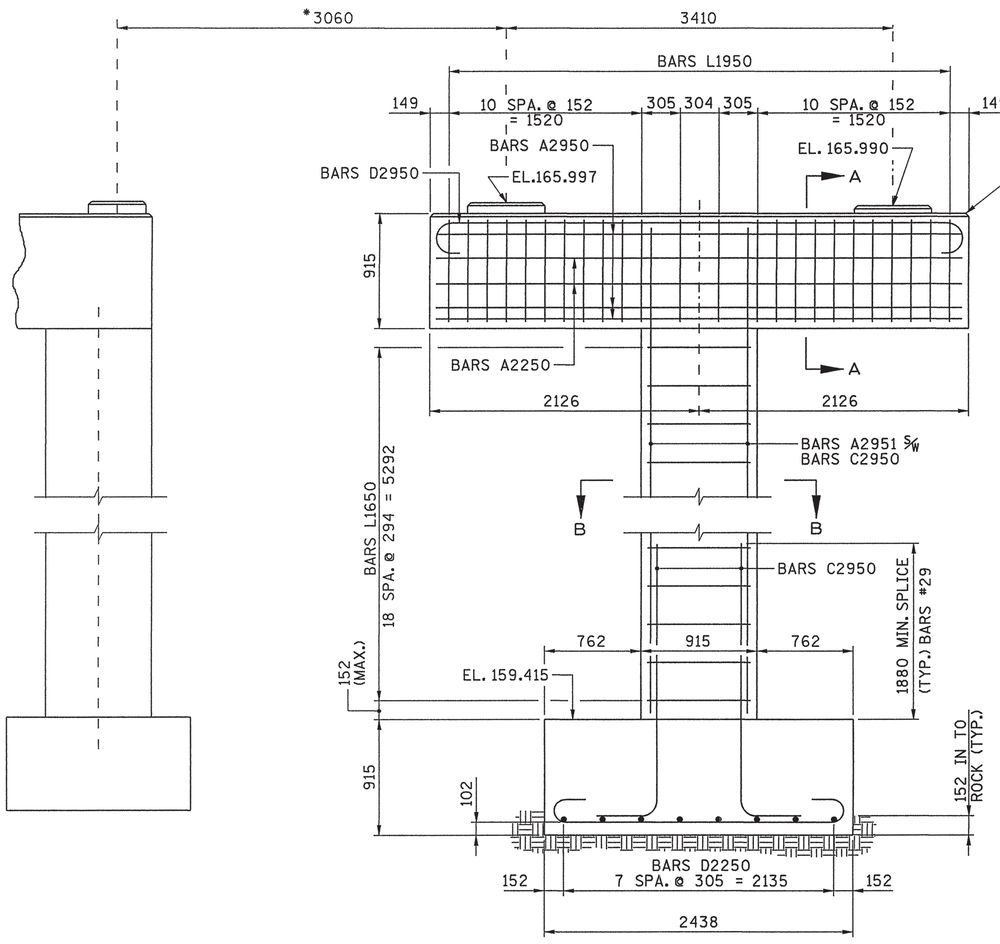


PLAN

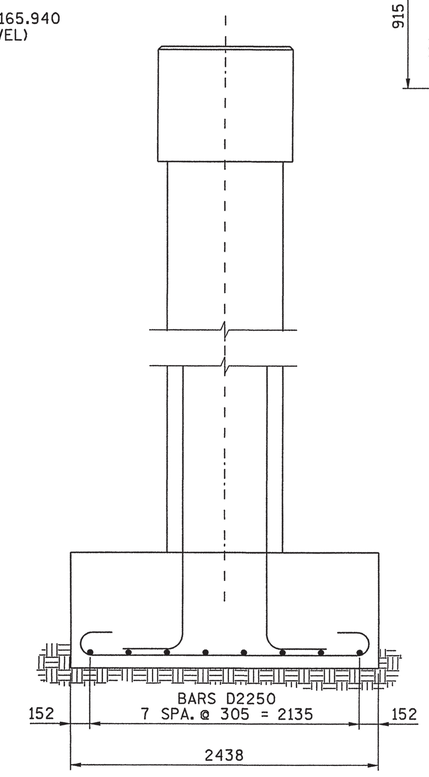
*DENOTES : DIMENSION SUPERCEDED BY VALUE SHOWN ON DWG NO M-435-93A



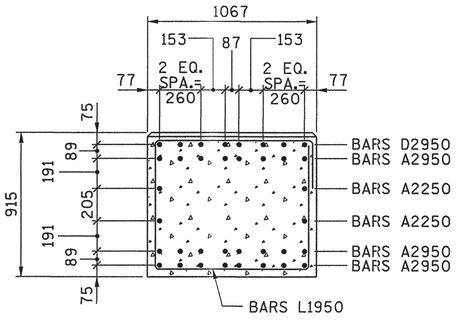
FOOTING PLAN



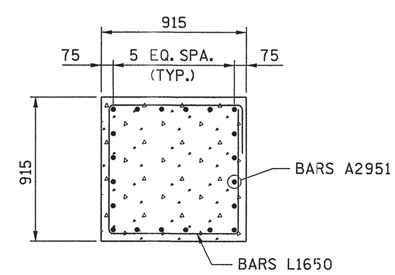
ELEVATION



SIDE ELEVATION



SECTION "A-A"



SECTION "B-B"

GENERAL NOTES

NOTES:
WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING STDM-6-1. BOLT PROJECTION 280.

RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM. COLUMN STEEL TO EXTEND 763 INTO CAP BEAM.

ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) M³	STEEL BAR REINFORCEMENT (BRIDGES) Kg
15	2153

NOTE: QUANTITIES BASED ON TOP OF FOOTING AT EL. 159.415 COLUMN REINFORCING STEEL SHALL NOT BE ORDERED UNTIL TOP OF FOOTING ELEVATION IS ESTABLISHED.

METRIC

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT NO. 2
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

HARDIE M. BROOKS, JR. STATE OF TENNESSEE

CORRECT Edward P Wasserman
ENGINEER OF STRUCTURES

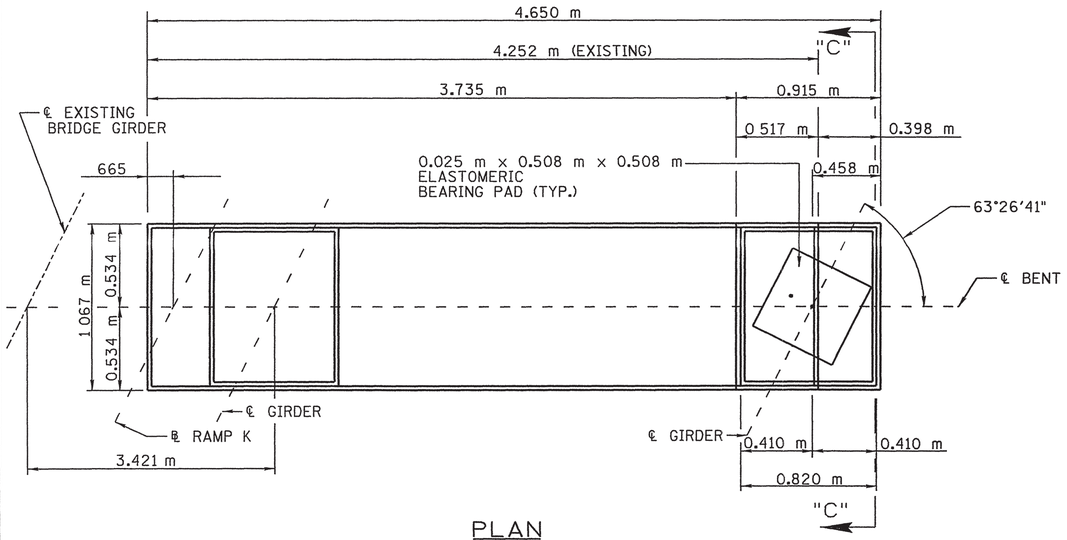
M-435-93

DESIGNED BY	L. PERRY	DATE	9-02
DRAWN BY	GS&P	DATE	9-02
SUPERVISED BY	TAK / HMB	DATE	9-02
CHECKED BY	L. PERRY	DATE	9-02

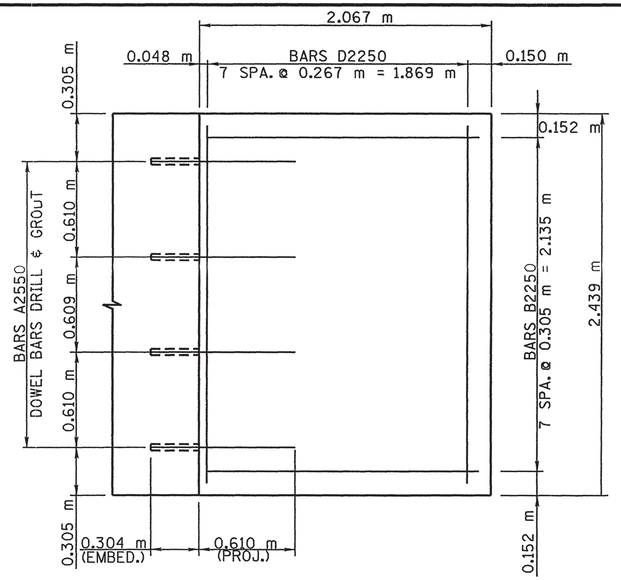
GRESHAM SMITH AND PARTNERS

\\JI0019083wf013\13shared\Structdrop\Drop\GSP,5 I-40 over CSX RR\as sent by consultant\Bent2-tdot dgn
11-JUN-2004
09:35

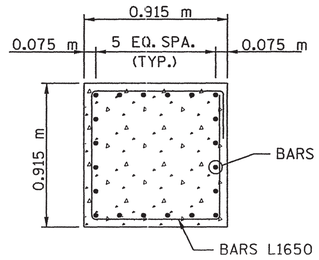
BENT2 TDOT.DGN



PLAN



PLAN OF FOOTING



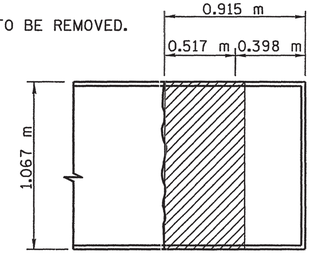
SECTION "B-B"

CONST. NO. 19003-3187-44		
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2004	

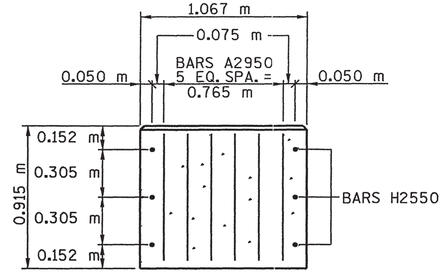
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	6-01-04	HMB	WIDENNING OF BENT

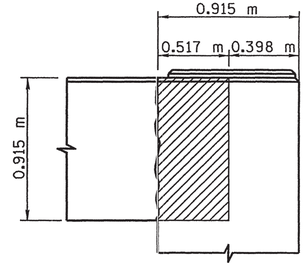
NOTE : HATCHED AREA DENOTES PORTION TO BE REMOVED.



PLAN

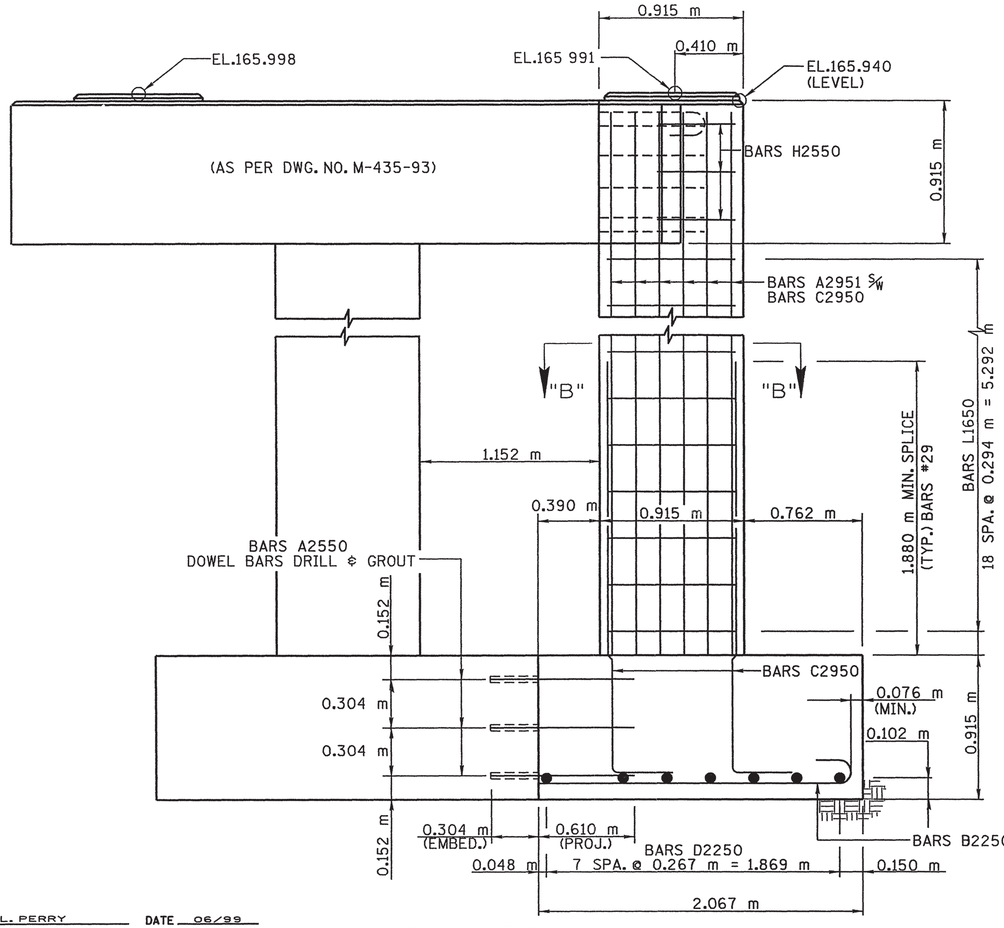


SECTION "C-C"

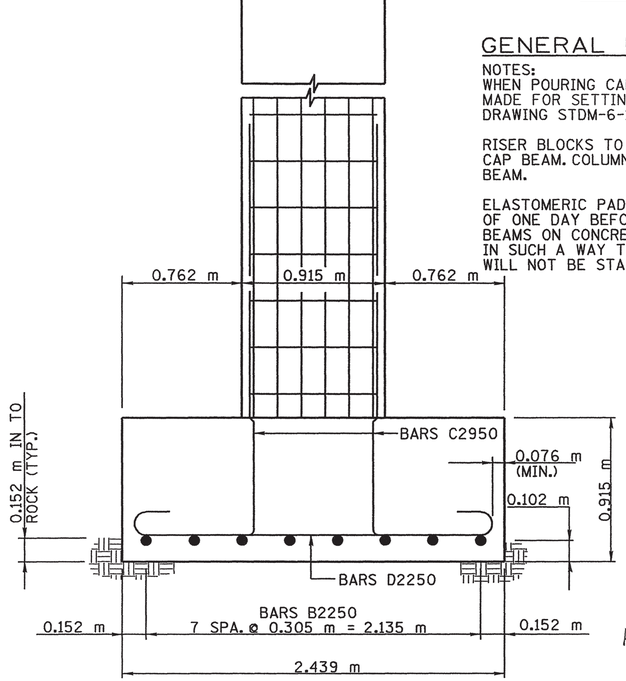


ELEVATION

SHOWING REMOVAL



ELEVATION
(LOOKING FORWARD ON SURVEY)



END ELEVATION

GENERAL NOTES

NOTES:
WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING STDM-6-1. BOLT PROJECTION 280.

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ESTIMATED QUANTITIES

CLASS "A" CONCRETE (BRIDGES) M^3	STEEL BAR REINFORCEMENT (BRIDGES) Kg
26	4906

DIVISION OF METRIC ENGINEERING

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT NO. 2
WIDENING OF INTERSTATE 40 (EASTBOUND LANE) AND RAMP K OVER C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
DAVIDSON COUNTY
2004

HARDIE M. BROOKS — STATE OF TENNESSEE — REGISTERED ENGINEER — 6/01/04

CORRECT Edward P Wasserman
ENGINEER OF STRUCTURES

M-435-93A

DESIGNED BY L. PERRY DATE 06/99
DRAWN BY FRANK F. FROST DATE 05/04
SUPERVISED BY HMB / R.L.H. DATE 05/04
CHECKED BY DATE

d:\dgn\bnt\Bent2-tdot.dgn
04-JUN-2004
08 02

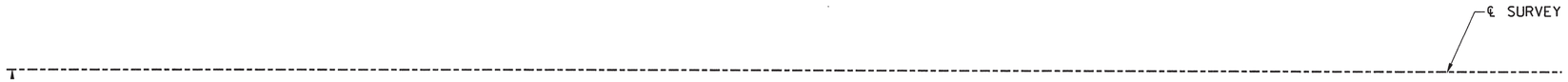
.DGN

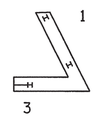
CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	GENERAL REVISIONS





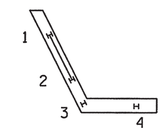
ABUTMENT NO. 1
(RIGHT)



BENT NO. 1
(RIGHT)



BENT NO. 1
(RIGHT)



ABUTMENT NO. 2
(RIGHT)

TABLE OF PILE DATA

		1	2	3	4
ABUTMENT NO. 1	PILE CUT-OFF ELEVATION				
	PILE TIP ELEVATION				
	IN PLACE PILE LENGTH				
ABUTMENT NO. 2	PILE CUT-OFF ELEVATION				
	PILE TIP ELEVATION				
	IN PLACE PILE LENGTH				

TABLE OF FOOTING DATA

	BENT NO. 1	BENT NO. 2
	A	A
TOP OF FOOTING ELEVATION		
BOTTOM OF FOOTING ELEVATION		

NOTE:
TO CONTRACTOR AND CONSTRUCTION OFFICE:
THE BLANKS ON THIS SHEET ARE TO BE FILLED IN BY THE CONSTRUCTION OFFICE AND/OR FIELD ENGINEER GIVING AS-BUILT CONDITIONS. AFTER COMPLETION IT IS TO BE SENT TO THE DIVISION OF STRUCTURES TO BECOME PART OF FINAL BRIDGE DOCUMENTS.

DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSeP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

HARDIE M. BROOKS, JR. STATE OF TENNESSEE

Hardie M. Brooks Jr. 11/08/02

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

BRIDGE NO. 5
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

1 FINAL FOUNDATION DATA
WIDENING OF INTERSTATE 40
(EASTBOUND LANE) AND
RAMP K OVER
C.S.X. RAILROAD
STATION 7+707.441
LOG MILE 13.65
BRIDGE I.D. NO. 19I00400039
DAVIDSON COUNTY
2002

M-435-94

.DGN

BILL OF STEEL

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	LP	GENERAL REVISIONS

SUPERSTRUCTURE (EPOXY)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1600E	SLAB	16	19					10530
A1601E	SLAB	16	19					7750
A1602E	SLAB	16	19					10360
A1900E	SLAB	19	38					12190
SERIES								
A1901E	SLAB	19	2	LENGTH VAR. 4535 TO 915 IN INC. OF 300 (13 BARS)				35425
SERIES								
A1902E	SLAB	19	2	LENGTH VAR. 4485 TO 5290 IN INC. OF 4 (221 BARS)				1080137
SERIES								
A1903E	SLAB	19	2	LENGTH VAR. 5325 TO 915 IN INC. OF 315 (15 BARS)				46800
B1371E	RAIL	13	334	675				875
L1600E	SLAB	16	19	510	110	305		1545
LA1601E	SLAB	16	17	915	305	280	175	2600

ABUTMENT NO. 1 (EPOXY)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1370E	ENDWALL	13	8					1075
A1940E	ENDWALL	19	2					5690
A1941E	ABUT. BEAM	19	39					1200
B1670E	WING/PARA	16	22	675				875
F1940E	RDWY.BRKT.	19	17	330	380	330	380	1200

ABUTMENT NO. 1 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1340	RDWY. BRKT.	13	1					4400
A1342	WING	13	13					1200
A1344	WING	13	5					3935
A1640	ABUT. BEAM	16	2					5425
A1642	WING	16	2					4125
A1940	ENDWALL	19	8					5690
A1941	ABUT. BEAM	19	3					1065
A1943	WING	19	13					1200

ABUTMENT NO. 1 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1945	DOWELS	19	11					610
B1940	WING	19	5	3930				4135
A2240	ABUT. BEAM	22	10					5425
A2242	WING	22	10					4125
D1950	ENDWALL	19	4	915				1315
H1640	RDWY. BRKT.	16	17	410	130			670
H1940	ABUT. BEAM	19	17	205	915			2035
H1941	WING	19	13	350	915			2180
L1640	WING	16	34	815	305	660		3255

ABUTMENT NO. 2 (EPOXY)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1370E	ENDWALL	13	8					1075
A1941E	ABUT. BEAM	19	44					1250
A1942E	ENDWALL	19	2					6595
B1670E	WING/PARA.	16	22	675				875
F1940E	RDWY. BRKT.	19	17	330	380	330	380	1250

ABUTMENT NO. 2 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1341	RDWY. BRKT.	13	1					4880
A1343	WING	13	13					1250
A1345	WING	13	5					4240
A1641	ABUT. BEAM	16	2					5995
A1643	WING	16	2					3890
A1941	ABUT. BEAM	19	2					1065
A1942	ENDWALL	19	8					6595
A1943	WING	19	13					1250
A1945	DOWELS	19	11					610
B1941	WING	19	5	4235				4440
A2241	ABUT. BEAM	22	10					5995
A2243	WING	22	10					3890
D1950	ENDWALL	19	4	915				1315

ABUTMENT NO. 2 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
H1640	RDWY. BRKT.	16	17	410	130			670
H1940	ABUT. BEAM	19	17	205	915			2035
H1941	WING	19	13	350	915			2180
L1640	WING	16	36	815	305	660		3255

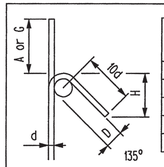
BENT NO. 1 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A2250	CAP	22	4					4150
A2950	CAP	29	24					4150
A2951	COLUMN	29	20					5426
C2950	COLUMN	29	20	2665				3065
D2250	FOOTING	22	16	2340				2840
D2950	CAP	29	8	4150				4900
L1650	COLUMN	16	16	815	305	815		3565
L1950	CAP	19	24	965	305	815		3865

BENT NO. 2 (REGULAR)

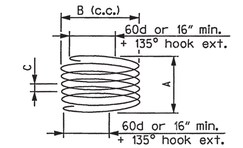
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A2250	CAP	22	4					4150
A2950	CAP	29	24					4150
A2951	COLUMN	29	20					6315
C2950	COLUMN	29	20	2665				3065
D2250	FOOTING	22	16	2340				2840
D2950	CAP	29	8	4150				4900
L1650	COLUMN	16	19	815	305	815		3565
L1950	CAP	19	24	965	305	815		3865

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH

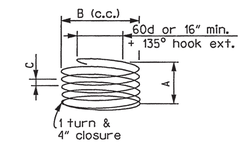


BAR SIZE	D (IN.)	135° HOOK HOOK A or G	135° HOOK H APPROX.
#4	2	6½	4½
#5	2½	8	5½
#6	4½	10¼	6½
#7	5¼	1-0¼	7¼
#8	6	1-2¼	9

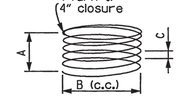
135° SEISMIC STIRRUP TIE HOOK DIMENSIONS (ALL GRADES)



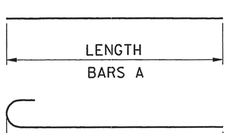
BARS M



BARS TB

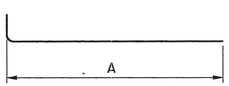


BARS CF



BARS A

BARS B



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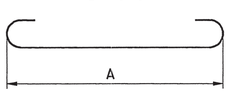
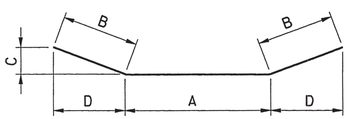
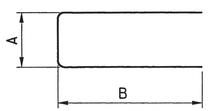


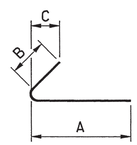
BARS D



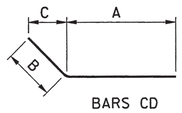
BARS E



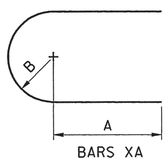
BARS H



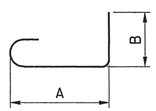
BARS CB



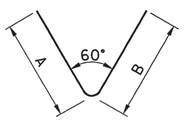
BARS CD



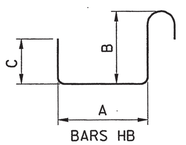
BARS XA



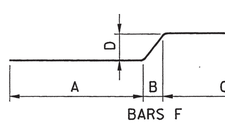
BARS YA



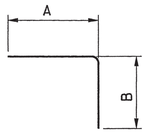
BARS VA



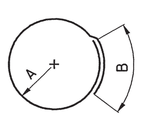
BARS HB



BARS F



BARS R



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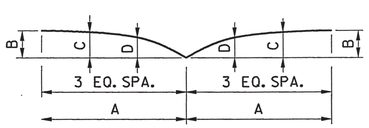

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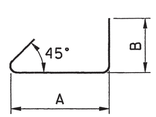
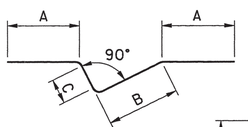
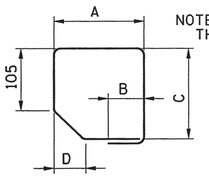


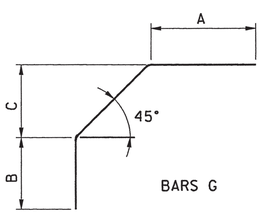
BARS YB



BARS JX



BARS LA



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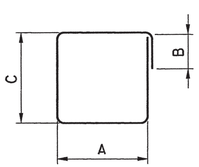

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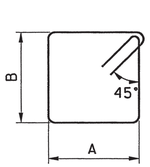

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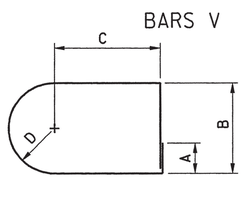

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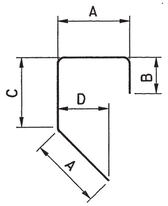
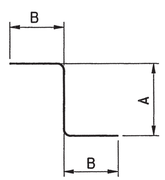


BARS J



BARS Z

REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

NOTE: Dimensions shown on this sheet are outside to outside of bar. Standard C.R.S.I. Hook Details shall apply, except as noted.

NOTE: The suffix E for bars so marked denotes epoxy coated reinforcement.

DIVISION OF METRIC ENGINEERING

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 5

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

⚠1 BILL OF STEEL

WIDENING OF INTERSTATE 40 (EASTBOUND LANE) AND RAMP K OVER C.S.X. RAILROAD

STATION 7+707.441

LOG MILE 13.65

BRIDGE I.D. NO. 19100400039

DAVIDSON COUNTY

2002

HARDIE M. BROOKS JR. 19 REGISTERED PROFESSIONAL ENGINEER STATE OF TENNESSEE

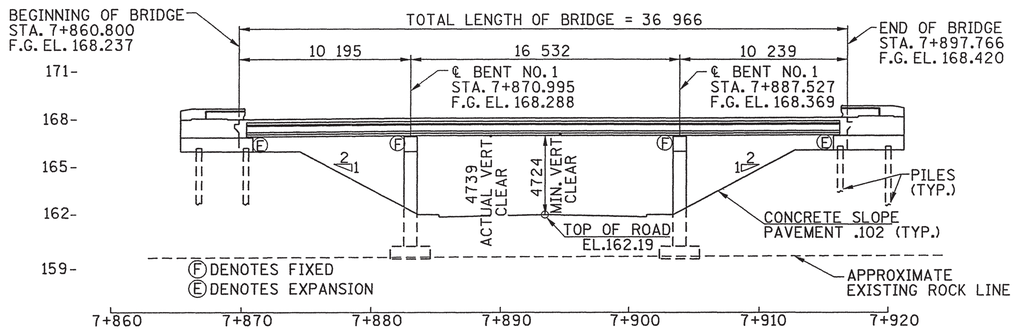
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-95

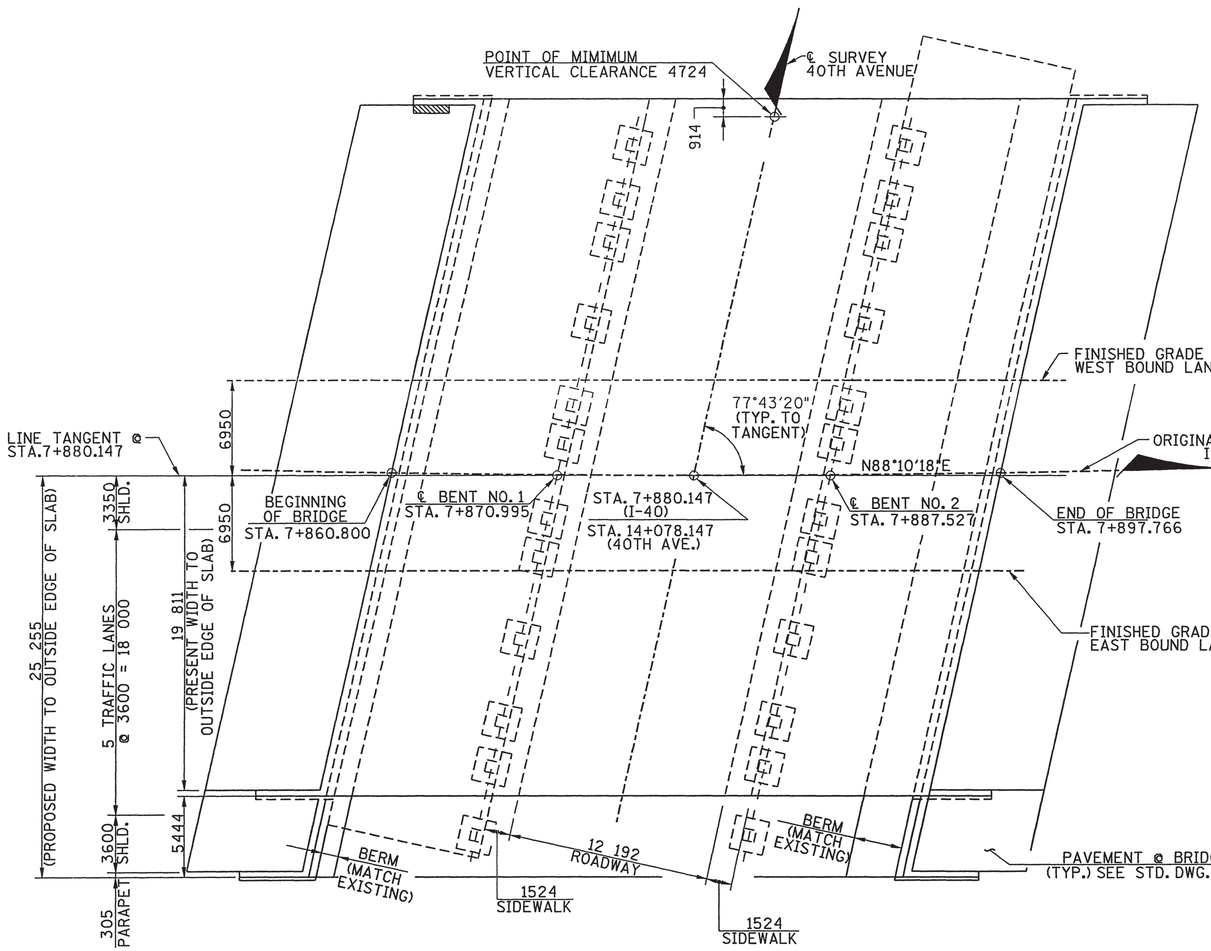
DESIGNED BY LAWRENCE PERRY DATE
DRAWN BY GSEP DATE
SUPERVISED BY TAK / HMB DATE
CHECKED BY DATE

GRESHAM SMITH AND PARTNERS

dgnspec
dgnlib
smu.mstn



ELEVATION

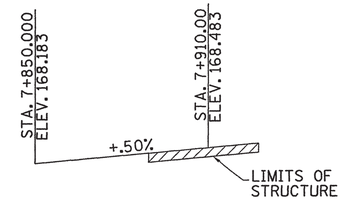


PLAN

NOTE: DASHED LINES INDICATE EXISTING STRUCTURE.

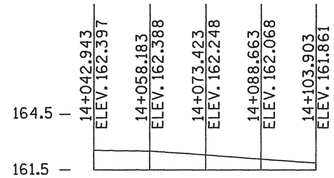
I-40 CURVE DATA

P.I. STA. 7+976.575
N 202348.910
E 523476.414
Δ 16°46'48.375" RT.
D 01°15'33.75"
T 208.403
L 413.823
R 1413.000
E 15.286
S.E. = EXISTING (2.80%)
DESIGN SPEED = 100 Km/h
P.C. STA. = 7+768.172
P.T. STA. = 8+181.994



FINISHED GRADE SKETCH I-40

(BASED ON ℄ SURVEY I-40)



FINISHED GRADE
SKETCH 40TH AVE.

(BASED ON EXISTING BRIDGE PLANS)

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	11/08/02	HB	ADDED PORT BARRIER RAIL QTY.
2	05/14/03	JF	GENERAL
3	02/20/04	JF	GENERAL
4	03/21/05	H.M.B.	REVISED REVISION DATES

LIST OF DRAWINGS

TITLE	DWG. NO.	LATEST REV. DATE
LAYOUT OF BRIDGE	M-435-96	03-21-05
GENERAL NOTES	M-435-97	
ESTIMATED QUANTITIES	M-435-97A	04-28-04
FOUNDATION DATA	M-435-98	12-11-01
SUPERSTRUCTURE	M-435-99	05-14-03
SUPERSTRUCTURE DETAILS	M-435-100	
SUPERSTRUCTURE DETAILS	M-435-101	
PRESTRESSED BEAMS (SPAN 1 ℄ 3)	M-435-102	
PRESTRESSED BEAMS (SPAN 2)	M-435-103	
ABUTMENT NO. 1 ℄ NO. 2	M-435-104	05-14-03
ABUTMENT NO. 1 ℄ NO. 2 DETAILS	M-435-105	05-14-03
BENT NO. 1 ℄ NO. 2	M-435-106	06-01-04
BENT NO. 1 ℄ NO. 2 DETAILS	M-435-106	02-20-04
FINAL FOUNDATION DATA	M-435-107	
BILL OF STEEL	M-435-108	04-28-04

LIST OF STANDARD DRAWINGS

TITLE	DWG. NO.	LATEST REV. DATE
STEEL SLIDER PLATE ASSEMBLIES FOR CONCRETE PARAPET AND BRIDGE DECK DRAIN DETAILS	STDM-1-2	01-05-01
REINFORCED CONCRETE PAVEMENT AT BRIDGE ENDS.	STDM-1-5	07-31-00
BRIDGE END DRAIN DETAILS 610 X 2620 ℄ 1220 X 2620 WITH PAVEMENT AT BRIDGE ENDS	STDM-1-7	07-31-00
STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION	STDM-3-1	06-10-96
STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION	STDM-3-2	06-10-96
STANDARD PILE DETAILS	STDM-5-2	05-21-99
STANDARD SEISMIC DETAILS	STDM-6-1	05-21-99
STANDARD DRAWING LIGHT STANDARD SUPPORT DETAILS	STDM-8-2	06-10-96
STANDARD REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS	STDM-9-1	06-10-96
MISCELLANEOUS ABUTMENT ℄ DRAINAGE DETAILS	STDM-10-1	06-10-96
BRIDGE RAILING CONCRETE PARAPET WITH STRUCTURAL TUBING	STDM-11-1	01-05-01
STANDARD DETAILS AND INTERMEDIATE DIAPHRAGM DETAILS FOR I-BEAMS	STDM-14-2	07-31-00

LIST OF SPECIAL PROVISIONS

TITLE	DWG. NO.	LATEST REV. DATE
APPROVAL OF SHOP DRAWINGS	105A	
STEEL STRUCTURES	602	
STRIP SEAL EXPANSION JOINTS	604M	
STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION	604S	

LIST OF REFERENCE DRAWINGS

1998 : M-359-96 THRU M-359-100, M-359-103 THRU M-359-110 (W.B.L.)
1995 : M-314-71 THRU M-314-76, M-314-79 THRU M-314-82 (E.B.L.)
1984 : M-144-91 THRU M-144-95, M-144-97 THRU M-144-100
1967 : K-66-19 THRU K-66-24

ADT(2002) - 91,352
ADT(2022) - 154,730

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE
WIDENING OF INTERSTATE 40 (EASTBOUND LANE) OVER 40TH AVENUE
BRIDGE I.D. NO. 19I00400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

DESIGNED BY JAF DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

HARDIE M. BROOKS, JR. 63 STATE OF TENNESSEE
3/22/05

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-96

V:\Consultant Files\Bridge Projects\Gresham and Smith and partners\GSP 6 I-40 EB over 40th Avenue\BR6-layout.dgn
Mar 22, 2005
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GENERAL NOTES:

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1, 1995 EDITION)

LOADING: HS20-44

DESIGN SPECIFICATIONS: AASHTO 1996 EDITION WITH ADDENDA INCLUDING THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES. (SEISMIC PERFORMANCE CATEGORY A WITH ACCELERATION COEFFICIENT 0.075.)

CONCRETE: TO BE CLASS "A" (CAST IN PLACE.) f'c = 21 MPa EXCEPT AS NOTED OTHERWISE.

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE "C" IN ARTICLE 604.23 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL. TEMPORARY ERECTION DIAPHRAGMS MUST BE USED AT THE ENDS OF PRECAST CONCRETE GIRDERS WHERE END DIAPHRAGMS, SUPPORT DIAPHRAGMS, OR ABUTMENT BACKWALLS ARE TO BE POURED CONCURRENTLY WITH THE DECK AND SHALL BE PROVIDED ELSEWHERE IN ACCORDANCE WITH THE SPECIFICATIONS TO PREVENT GIRDER ROTATION. SEE STANDARD DRAWINGS STDM-4-1 THRU 4, STDM-14-2 AND ARTICLE 604.05 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL: SHALL BE ASTM A615M GRADE 400 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

PILES: TO BE HP250 X 62 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 490 KN FOR THE ABUTMENTS ℄ BENTS.

BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STDM-1-1.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A.

DRILLED-IN ANCHORS (MECHANICAL OR EPOXY):
CERTIFICATION: THE CONTRACTOR SHALL FURNISH CERTIFIED ANCHOR PULL OUT DATA FROM AN INDEPENDENT TESTING LABORATORY USING CLASS "A" CONCRETE AS PRESCRIBED BY TENNESSEE HIGHWAY SPECIFICATIONS. THE REQUIRED ULTIMATE LOAD FOR 22.225 MM ø ANCHORS IS 84516N, 80067.996N FOR 19.06 MM ø ANCHORS, 53378.664N FOR 15.875 MM ø AND 40033.998N FOR 12.7 MM ø. IN PLACE REQUIREMENTS: THE UNITS SHALL BE SUBSET 2.38 MM TO 6.35 MM AND TORQUED, WITH BASE PLATE IN PLACE, TO AN EQUIVALENT DIRECT PULL OUT LOAD OF 60 PERCENT OF REQUIRED ULTIMATE LOAD. THE DEPARTMENT WILL PREFORM TESTING OF ANCHORS ON SITE TO INSURE THE SPECIFIED IN PLACE REQUIREMENTS. INSTALLATIONS NOT MEETING THESE REQUIREMENTS MUST BE CORRECTED AT THE CONTRACTOR'S EXPENSE. FOR MECHANICAL ANCHORS, SLIPPAGE SHALL NOT EXCEED 6.35 MM.

NOTE: OUR MAINTENANCE RECORDS INDICATE THIS BRIDGE HAS BEEN STRIPPED OF ALL LEAD AND/OR CHROMATE BASED PAINTS AND REPAINTED WITH INORGANIC ZINC PRIMER AND VINYL TOP COAT.

THE REINFORCED CONCRETE MEDIAN BARRIER RAIL SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON DRAWING STDM-1-3 AND SHALL BE GIVEN AN APPLIED TEXTURE FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO WHITE, FEDERAL SPECIFICATION NO. 37886. THE COST OF THE FINISH SHALL BE INCLUDED IN THE LINEAR FOOT PRICE BID FOR THE MEDIAN RAIL. PRECAST BRIDGE DECK PANELS ARE NOT PERMITTED IN THE BAY SUPPORTING THE MEDIAN BARRIER RAIL.

NOTE: THE CONTRACTOR SHALL SAW CUT 25.4MM DEEP INTO THE SLAB BEFORE REMOVING CONCRETE. ALL TRANSVERSE REINFORCING STEEL SHALL REMAIN IN PLACE AND BE SPLICED WITH THE NEW REINFORCING. THE CONTRACTOR SHALL NOT USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM) OR OTHER SIMILAR HEAVY EQUIPMENT FOR CONCRETE REMOVAL. THE MAXIMUM ALLOWABLE HAMMER SIZE IS THE 27.19KG.

NOTE: FOR BOTH STEEL GIRDERS AND PRESTRESSED CONCRETE BEAMS, THE CONTRACTOR SHALL PROVIDE 100% CONVENTIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 4.5 M.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. A CLASS FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITEM 604M04.01 AND 604M04.02.

VALUE ENGINEERING ALTERNATE BRIDGE DESIGN CRITERIA: ALTERNATE BRIDGE DESIGN PROPOSALS MAY NOT DIMINISH THE FUNCTIONAL OR STRUCTURAL EQUIVALENCY OF THE BRIDGE AND MUST MEET OR EXCEED BOTH THE SERVICE LEVEL AND ULTIMATE CAPACITIES OF THE CONTRACT PLANS STRUCTURE. ADDITIONALLY, THE HORIZONTAL CLEARANCES MAY NOT BE REDUCED, NOR MAY THE VERTICAL CLEARANCES BE LESS THAN THE MINIMUM ACCEPTABLE FOR THE TYPE FACILITY CROSSED.

SPECIAL NOTE-FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING BEEN COMPLETED, HOLES 2M DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

FOUNDATION PREPARATION: SEE SECTION 204 OF THE STANDARD SPECIFICATIONS. IF COFFERDAMS ARE REQUIRED, THEY SHALL BE IN ACCORDANCE WITH SECTION 204.09 OF THE STANDARD SPECIFICATIONS.

GROUTED BARS IN DRILLED HOLES: HORIZONTALLY DRILLED HOLES SHALL BE DRILLED 12MM IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH NON-SHRINK GROUT, AND THE BAR ROTATED (NOT DRIVEN) TO ITS SEAT. VERTICALLY DRILLED HOLES SHALL BE DRILLED 6MM IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR SHALL BE DRIVEN TO ITS SEAT. ALL GROUTING MATERIAL SHALL BE APPROVED BY T.D.O.T. MATERIALS AND TESTS.

SPECIAL NOTE FOR UTILITIES: IT IS INTENDED THAT THE COST OF MATERIALS AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION OF UTILITIES SHALL BE BORNE BY OTHERS AND SHALL NOT BE PAID FOR AS A PART OF THIS CONTRACT. THE CONTRACTOR SHALL COOPERATE WITH OTHERS IN THE INSTALLATION OF UTILITIES WITH NO ADDITIONAL COMPENSATION ALLOWED THE CONTRACTOR AS A RESULT.

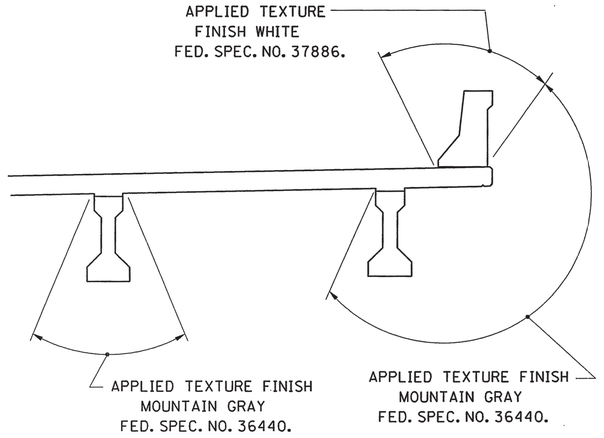
CONCRETE SEALER: CONCRETE SHALL BE APPLIED TO SUBSTRUCTURES COINCIDING WITH EXPANSION JOINT LOCATIONS BEFORE PLACEMENT OF BEARING DEVICES AND APPLYING TEXTURES COATING. [CONCRETE SEALER SHALL BE APPLIED TO THE FRONT VERTICAL FACE OF THE ABUTMENT BACKWALL, THE FRONT AND TOP OF THE ABUTMENT BEAM (PLUS CURTAIN WALLS, SUMP WALLS OR ANY OTHER FACES THAT ARE DEEMED NECESSARY BY THE ENGINEER).] [CONCRETE SEALER SHALL BE APPLIED TO THE TOP AND VERTICAL SURFACES OF THE BENT OR PIER CAP.]
CONCRETE SHALL BE CLEAN AND DRY BEFORE APPLYING THE CONCRETE SEAL, AND THE THICKNESS OF THE SEAL SHALL BE AS RECOMMEND BY THE SEALANT MANUFACTURER. ACCEPTABLE CONCRETE SEALERS ARE INCLUDED IN THE QUALIFIED PRODUCTS LIST FOR NON-PENETRATING CONCRETE SEALS MAINTAINED BY THE DIVISION OF MATERIALS AND TESTS. THE SEALER SHALL BE CLEAR OR SIMILAR TO THE COLOR OF EXISTING CONCRETE SURFACES TO BE SEALED. THE COST OF THE SEALER, COMPLETE AND IN PLACE, SHALL BE INCLUDED IN THE UNIT PRICE OF THE EXPANSION DEVICE AT EACH SUBSTRUCTURE.

NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDER.

NOTE: THE FILLS AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

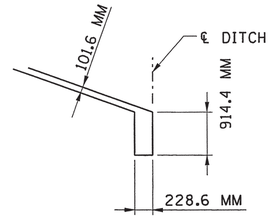
REQUIREMENTS AND RESTRICTIONS FOR PHASE CONSTRUCTION
1-THE LOCATION OF LONGITUDINAL CONSTRUCTION JOINTS SHALL NOT BE CHANGED TO ACCOMMODATE REMAIN IN PLACE DECK FORMS.
2-NO SHEET PILES OR BEARING PILES MAY BE DRIVEN FROM THE EXISTING OR PROPOSED STRUCTURE.
3- 2 - 3300mm ℄ 1 - 3000mm TRAFFIC LANES SHALL BE MAINTAINED AT ALL TIMES.

IF THE USE OF PERMANENT DECK FORMS REQUIRES ADDITIONAL SLAB THICKNESS, THE CONTRACTOR WILL BE REQUIRED TO REDESIGN THE GIRDERS WHEN THE SLAB THICKNESS IS INCREASED MORE THAN 38. ALL CHANGES TO THE GIRDERS SHALL BE AT THE CONTRACTORS EXPENSE.



APPLIED TEXTURE FINISH SKETCH

NOTE: IN ADDITION TO THE SURFACES SHOWN IN THE APPLIED TEXTURE FINISH SKETCH ALL EXPOSED SURFACES OF THE WINGWALLS, ABUTMENT BEAMS, BENT AND EXTERIOR PORTIONS OF ENDWALLS ARE TO RECEIVE AN APPLIED TEXTURE FINISH (MOUNTAIN GREY, FED. SPEC. NO. 36440.)



REINFORCED CONCRETE SLOPE PAVEMENT

PAVE SLOPES AND EXPOSED EARTH UNDER BRIDGE WITH 101.6 MM THICK CEMENT CONCRETE SLAB REINFORCED WITH 5.7 MM DIAMETER WIRE FABRIC @ 152.4 MM CENTERS AND 26.6 KG PER 9.29 SQUARE METERS. THE WIRE FABRIC REINFORCEMENT SHALL BE PLACED AT ONE-HALF THE DEPTH OF THE SLAB AND EXTEND TO WITHIN 76.2 MM OF ITS EDGE WITH A 304.8 MM LAP REQUIRED ON ALL SHEETS. THE COST OF THE WIRE FABRIC REINFORCEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 709M04, REINFORCED CONCRETE SLOPE PAVEMENT. 12.7 MM PREMOULDED EXPANSION JOINTS WITHOUT LOAD TRANSFERS SHALL BE FORMED ABOUT ALL STRUCTURES AND FEATURES PROJECTING THROUGH, IN OR AGAINST THE UNDER RAIL CENTER LINES (RESPECTIVE) AT 1.829 METERS CENTERS. DEPTH OF GROOVE TO BE NOT LESS THAN 25.4 MM. SEE STD. DWG. STD. DWG. RDM-SA-1 FOR LIMITS OF SLOPE.

DIVISION OF METRIC STRUCTURES

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

BRIDGE NO. 6
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

HARDIE M. BROOKS, JR. REGISTERED ENGINEER 5-15-03 STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-97

DESIGNED BY JAF DATE 9-02
DRAWN BY GSEP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

Microsoft Corporation

GN299.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	10/17/02	HMB	OMIT ITEM 604M10.44
2	05/14/03	JF	GENERAL
3	02/20/04	JF	REVISED QUANTITIES
4	04/28/04	JF	REVISED QUANTITIES FOR BENTS

⚠1 ESTIMATED BRIDGE QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 1	BENT. NO. 1	BENT. NO. 2	ABUT. NO. 2
⑩	202M04.06	REMOVAL OF STRUCTURES (EXIST. BR. 19-I0040-13.76)	LS	1					
①	204M02.01	DRY EXCAVATION (BRIDGES)	M^3	84		24	18	18	24
	204M04.01	ROCK EXCAVATION (BRIDGES)	M^3	8			4	4	
	204M05.00	ROCK DRILLING (BRIDGES)	M	4					
②	303M01.02	GRANULAR BACKFILL (BRIDGES)	TONNE	22		11			11
⑪	604M02.03	EPOXY COATED REINFORCING STEEL	Kg	10059	9447	305			307
⚠2 ③	604M03.01	CLASS "A" CONCRETE (BRIDGES)	M^3	54		13	14	14	13
⚠4 ⚠3 ⑪	604M03.02	STEEL BAR REINFORCEMENT (BRIDGES)	Kg	6464	277	982	2262	2274	1135
⑫ ④	604M03.04	PAVEMENT AT BRIDGE ENDS	M^2	80					
	604M03.09	CLASS "D" CONCRETE (BRIDGE DECK)	M^3	57	57				
	604M04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	M^2	619					
	604M04.02	APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	M^2	1203					
	604M05.31	BRIDGE DECK GROOVING (MECHANICAL)	M^2	336					
	604M10.30	BRIDGE DECK REPAIRS (FULL DEPTH OF SLAB)	M^2	2					
	604M10.50	BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB)	M^2	20					
	604M10.54	CONCRETE REPAIRS	M^2	3					
	606M02.03	STEEL PILES (250mm)	M	110		60			50
⑥	615M01.02	PRESTRESSED CONCRETE I BEAM (TYPE IM)	M	72					
	620M03.10	CONCRETE PARAPET (STDM-1-1)	M	46					
	709M04.00	REINFORCED CONCRETE SLOPE PAVEMENT	M^3	6					
⑧	710M09.01	150mm PERFORATED PIPE WITH VERTICAL DRAIN SYSTEM	M	20		10			10
	710M09.02	150mm PIPE UNDERDRAIN	M	18		9			9
⑨	714M01.06	STRUCTURAL LIGHTING (BRIDGE NO. 6)	L.S.	1					

① NOTE: EXCAVATION BASED ON EXISTING GROUND LINE.

② NOTE: GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STANDARD DRAWING STDM-10-1.

⚠2 ③ NOTE: THE COST OF ALL MATERIALS AND LABOR NECESSARY FOR THE INSTALLATION OF 8 ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 604M03.01, CLASS "A" CONCRETE (BRIDGES).

④ NOTE: PRIOR TO CONSTRUCTION OF THE PAVEMENT AT BRIDGE ENDS, THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL.

⑥ NOTE: COST OF ELASTOMERIC PADS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE UNIT PRICE FOR THE PRESTRESSED BEAM.

⑦ NOTE: THE COST OF REMOVING ANY EXISTING ASPHALT OVERLAY SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SCARIFYING.

⑧ NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN THE UNIT PRICE BID FOR PERFORATED PIPE.

⑨ STRUCTURAL LIGHTING INCLUDES ① 31.75mm RGS CONDUIT(66M); ② 101.6mm X 38mm SQ. METAL JUNCTION BOX (EA.=4). SEE RDWY. SHEET 46DD.

⑩ NOTE: THE COST OF REMOVING THE EXTERIOR PORTION OF THE EXISTING SLAB, PORTIONS OF THE EXISTING ABUTMENT, AND THE BRIDGE RAIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202M04.03

⑪ MECHANICAL BAR SPLICERS MUST BE ON THE APPROVED LIST MAINTAINED BY THE DIVISION OF MATERIALS AND TESTS. THE BAR SPLICER SHALL MEET AASHTO STANDARD SPECIFICATIONS FOR MECHANICAL CONNECTION. WHEN EPOXY COATING IS REQUIRED, THE EXPOSED THREADS SHALL BE REPAIRED AFTER SPLICING ACCORDING TO SECTION 907 OF THE STANDARD SPECIFICATIONS. THE COST OF FURNISHING THE BAR SPLICERS, (AND EPOXY COATING WHEN REQUIRED) INCLUDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE INSTALLATION, SHALL BE INCLUDED IN UNIT PRICE BID FOR ITEM 604M03.02 AND ITEM 604M02.03.

⚠1 ⑫ NOTE: CONTRACTOR SHALL INSTALL #25 DOWEL BARS (610 IN LENGTH) INTO EXISTING PAVEMENT AT BRIDGE END SLAB. THE BAR SHALL BE EMBED 305 AND SEATED IN GROUT PER THE STANDARD SPECIFICATIONS. COST OF ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION SHALL BE INCLUDED IN ITEM NO. 604M03.04.

DESIGNED BY J. FALCE DATE 9/02
DRAWN BY M.CHILDRESS DATE 9/02
SUPERVISED BY RLH / HMB / TAK DATE 9/02
CHECKED BY DATE 9/02

DIVISION OF METRIC STRUCTURES

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

HARDIE M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE

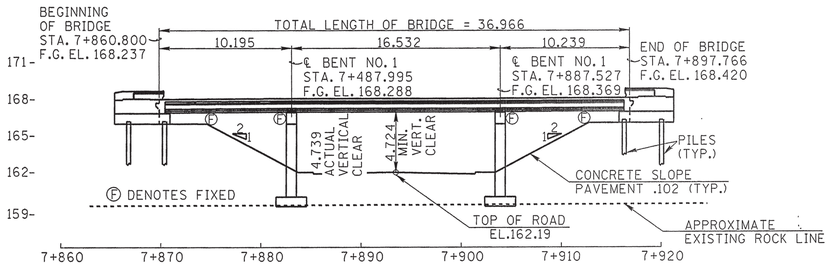
CORRECT Edward A. Wasserman
ENGINEER OF STRUCTURES

ESTIMATED QUANTITIES
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

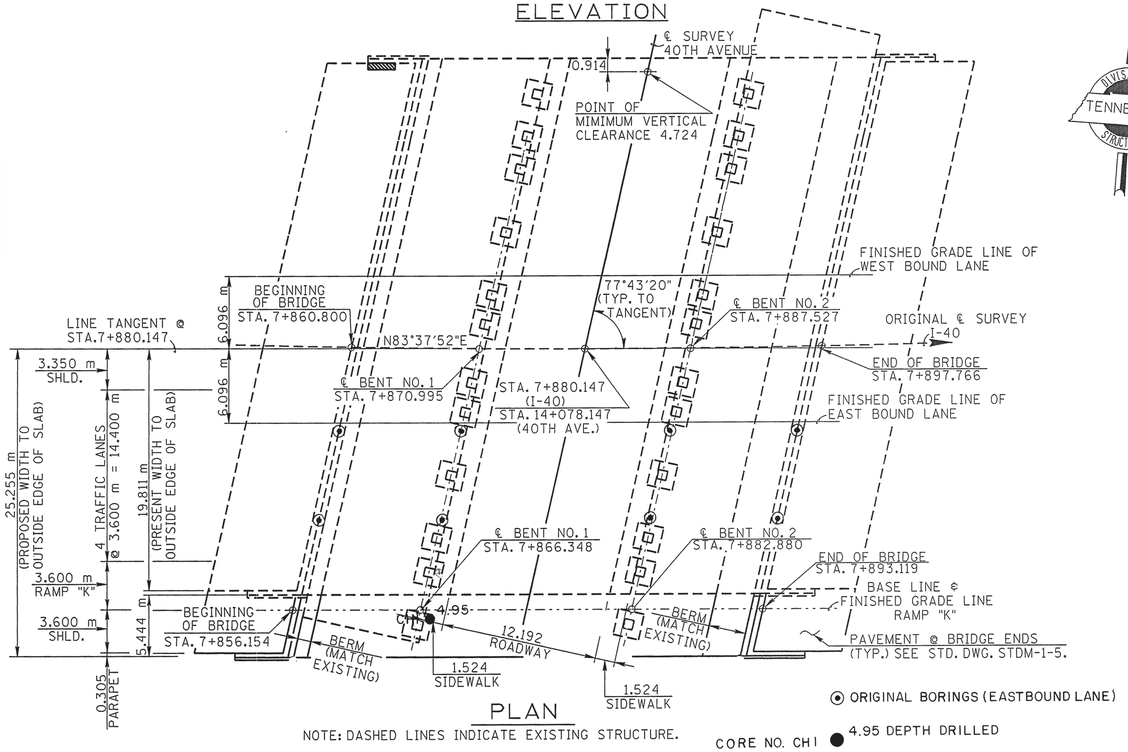
M-435-97A

\\J10019083wf013\13shared\Structdrop\Drop\Bridge 6 - Robertson Road Project\gn299m.dgn
29-APR-2004
09:57

DAT120M.DGN



ELEVATION



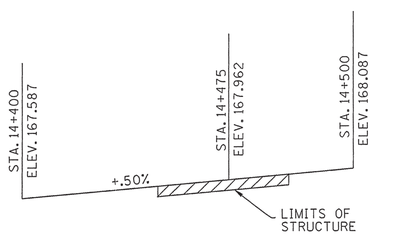
PLAN

NOTE: DASHED LINES INDICATE EXISTING STRUCTURE.

⊙ ORIGINAL BORINGS (EASTBOUND LANE)

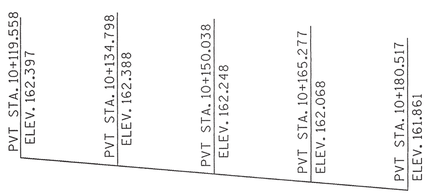
CORE NO. CH1 ● 4.95 DEPTH DRILLED

NOTE: FOOTING DIMENSIONS AND ELEVATIONS ARE TENATIVE AND SUBJECT TO CHANGE IN THE FINAL DESIGN AFTER FOUNDATION INFORMATION IS RECEIVED.



FINISHED GRADE SKETCH I-40

(BASED ON ℄ SURVEY I-40)



FINISHED GRADE SKETCH 40TH AVENUE NORTH

(BASED ON ℄ SURVEY 40TH AVENUE NORTH)

DESIGNED BY JASON FALCE DATE 10-01
DRAWN BY FRANK F. FROST DATE 10-01
SUPERVISED BY ROBERT LEFEVRE DATE 10-01
CHECKED BY DATE

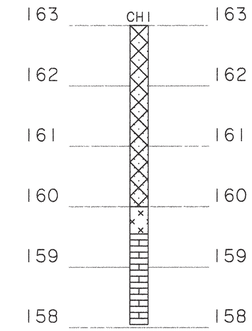
NOTE:

BORING DEPICTIONS SHOWN OF FOUNDATION DATA SHEET INDICATE GENERAL SOIL AND ROCK TYPES AT THE SPECIFIC BORING LOCATIONS.

TO ASSIST IN BID PRERARATION FOR FOUNDATION CONSTRUCTION DETAILED ROCK AND SOIL DESCRIPTIONS AND, ON SOME PROJECTS, ROCK SAMPLES ARE AVAILABLE FOR INSPECTION AT THE MATERIALS AND TESTS HEADQUARTERS AT 6601 CENTENNIAL BLVD. NASHVILLE, TN. (615-350-4130)

ORIGINAL BORINGS (EASTBOUND LANE)

BORING	STATION	OFFSET	ROCK ELEVATION
1	7+859	14 RT	159.25
2	7+860	7 RT	159.85
3	7+870	14 RT	160.85
4	7+871	7 RT	158.75
5	7+886	14 RT	160.60
6	7+888	7 RT	160.55
7	7+897	14 RT	161.10
8	7+899	7 RT	161.10



GROUND AND ROCK

I G 163.00 / R 159.55

CLAY, SILTY (FILL SOIL)

LIMESTONE, BOULDER (FLOAT) IN CLAY

LIMESTONE

NOTES:
REQUIRED:

1) SUFFICIENT GROUND, ROCK AND CORING INFORMATION FOR BRIDGE FOUNDATION.

2) APPROXIMATE EXISTING GROUND AND ROCK LINE.

BENCHMARK #13
RAILROAD SPIKE IN POWER POLE
ELEVATION = 162.761

BENCHMARK #14
CHISELED SQUARE CORNER OF HEADWALL
ELEVATION = 173.365

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
NH-I40-4(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	12-11-01	HMB	REVISED POINTS

NOTE: THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

NOTE: ALL DIMENSIONS SHOWN IN METERS UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 6 FOUNDATION DATA WIDENING OF I-40 OVER 40TH AVENUE

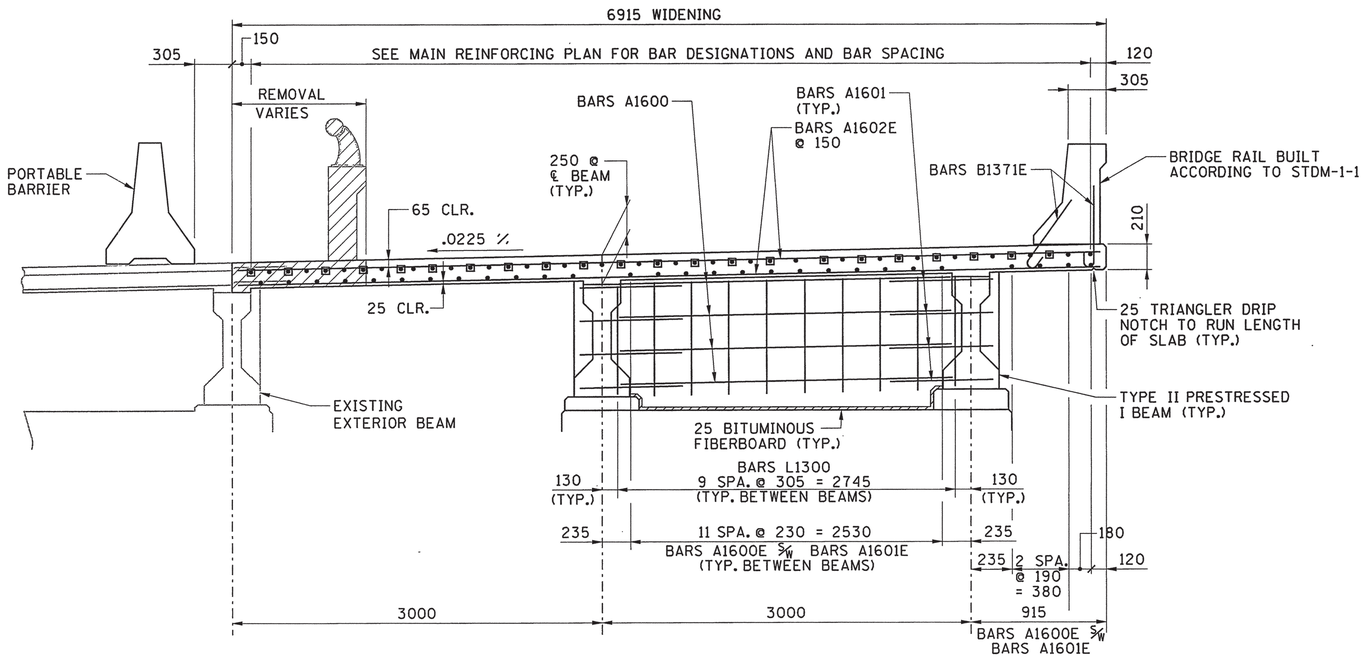
BRIDGE I.D. NO. 19I00400041
STATION 14+472.789
LOG MILE 13.74
DAVIDSON COUNTY

CORRECT Edward P. Wasserman 2002
ENGINEER OF STRUCTURES

M-435-98

12/13301

.DGN

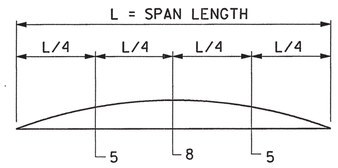


TYPICAL CROSS SECTION ℄ SUPPORT

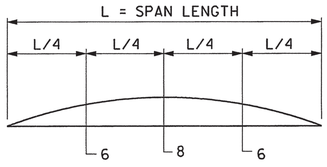
(LOOKING FORWARD ON SURVEY)
(FOR BAR DESIGNATION SEE MAIN REINFORCING PLAN)

▣ DENOTES: CUT BAR

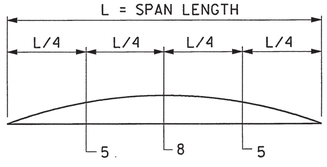
• DENOTES: CONTINUOUS BAR



SPAN NO. 1



SPAN NO. 2



SPAN NO. 3

SPECIAL NOTE FOR ANCHOR BOLTS AT BENTS: ANCHOR BOLT ASSEMBLIES AT BENTS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING STD-6-1

DEAD LOAD CORRECTION CURVE: THIS CURVE IS FOR DEAD LOAD SLAB AND ALL DEAD LOADS THAT ARE APPLIED AFTER SLAB IS IN PLACE AND SHOULD BE CORRECTED TO COMPENSATE FOR THE EFFECTS DUE TO BRIDGE GRADE.

NOTE: THE SUPPORT DIAPHRAGMS AT THE BENTS SHALL BE FORMED AND THE BOTTOM 15 INCHES POURED AS SOON AS POSSIBLE AFTER THE BEAMS HAVE BEEN SET. THE REMAINDER OF THE DIAPHRAGM SHALL BE POURED CONCURRENTLY WITH THE DECK SLAB. ALL DIAPHRAGMS CONCRETE SHALL BE INCLUDED IN THE QUANTITY FOR ITEM 604-03.09.

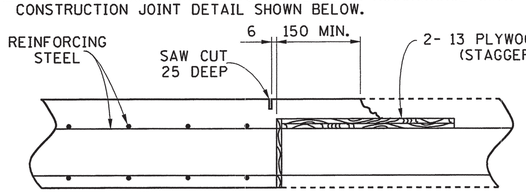
CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	05/14/03	JF	GENERAL

ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE SLAB CONSTRUCTION JOINT DETAIL SHOWN BELOW.



SLAB CONSTRUCTION JOINT DETAIL

(N.T.S.)

SUPERSTRUCTURE NOTES

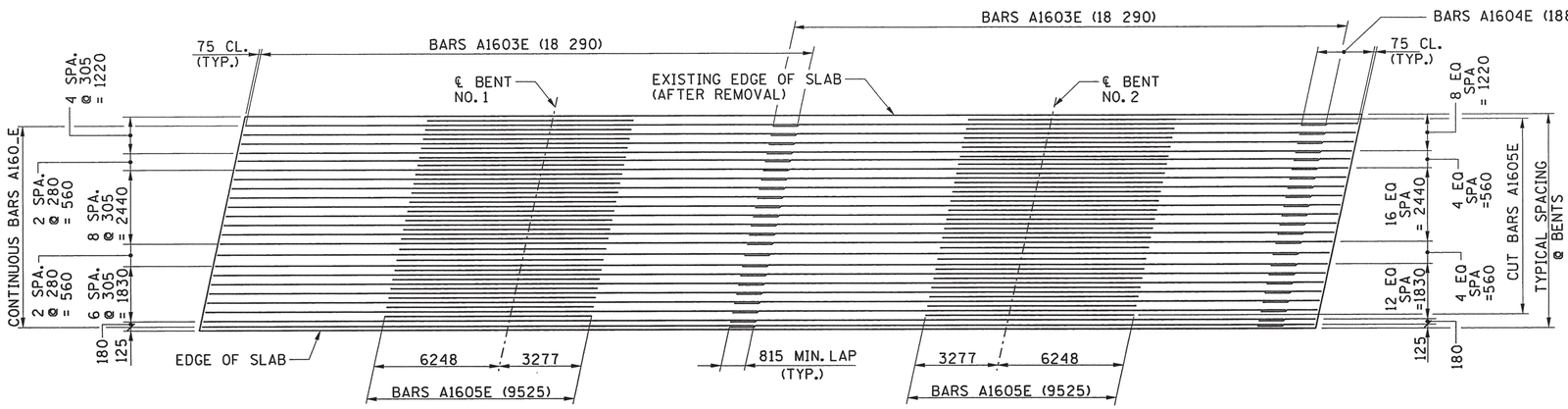
NOTE : THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE BEAMS TO PREVENT DAMAGE DUE TO TWISTING OR OVERTURNING DURING ALL PHASES OF CONSTRUCTION. IT IS STRONGLY RECOMMENDED THAT THE TEMPORARY ERECTION DIAPHRAGMS BE INSTALLED AND THE PERMANENT INTERMEDIATE DIAPHRAGMS BE POURED AND CURED PRIOR TO PLACING ANY LOADS ON THE GIRDERS. HOWEVER, TEMPORARY ERECTION DIAPHRAGMS AND PERMANENT INTERMEDIATE DIAPHRAGMS MUST BE IN PLACE IN THE SPAN AT THE TIME THE SLAB IS POURED IN SAID SPAN.

NOTE : NO PORTION OF THE PARAPET SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.

NOTE : WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR PARAPET. THE PARAPET SHALL NOT BE POURED UNTIL THE SLAB IS POURED AND CURED. ALSO SEE STD. DRAWING STDM-11-1.

ESTIMATED QUANTITIES

CLASS "D" CONCRETE (BRIDGE DECK) M³	EPOXY COATED REINFORCING STEEL (BRIDGES) KG	STEEL BAR REINFORCEMENT (BRIDGES) KG
57	9447	277



MAIN REINFORCING PLAN

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
WIDENING OF INTERSTATE 40 (EASTBOUND LANE) OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

HARDIE M. BROOKS, JR. — 242 — REGISTERED ENGINEER — STATE OF TENNESSEE — 5/14/03

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-99

DESIGNED BY JAF JAF DATE 9-02
DRAWN BY GSEP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

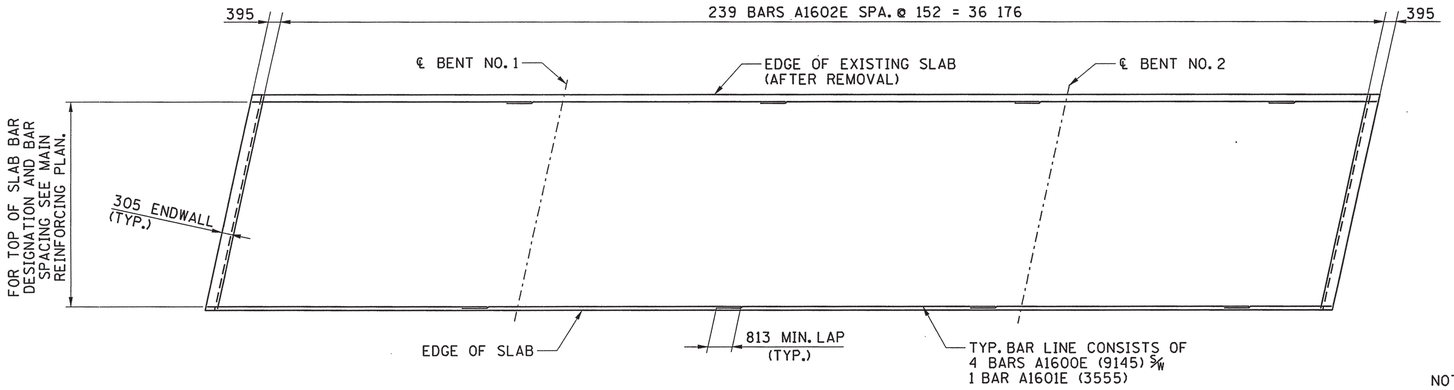
.DGN

CONST. NO. 19003-3187-44

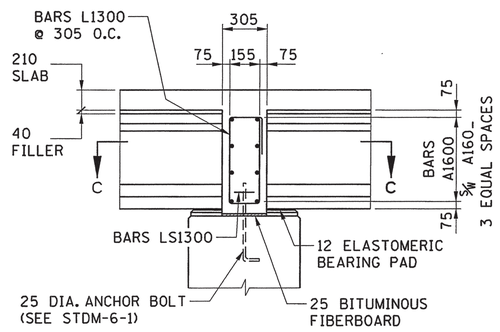
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

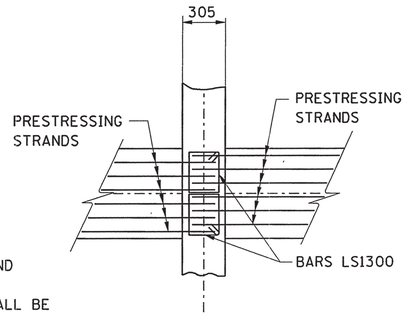


SLAB PLAN

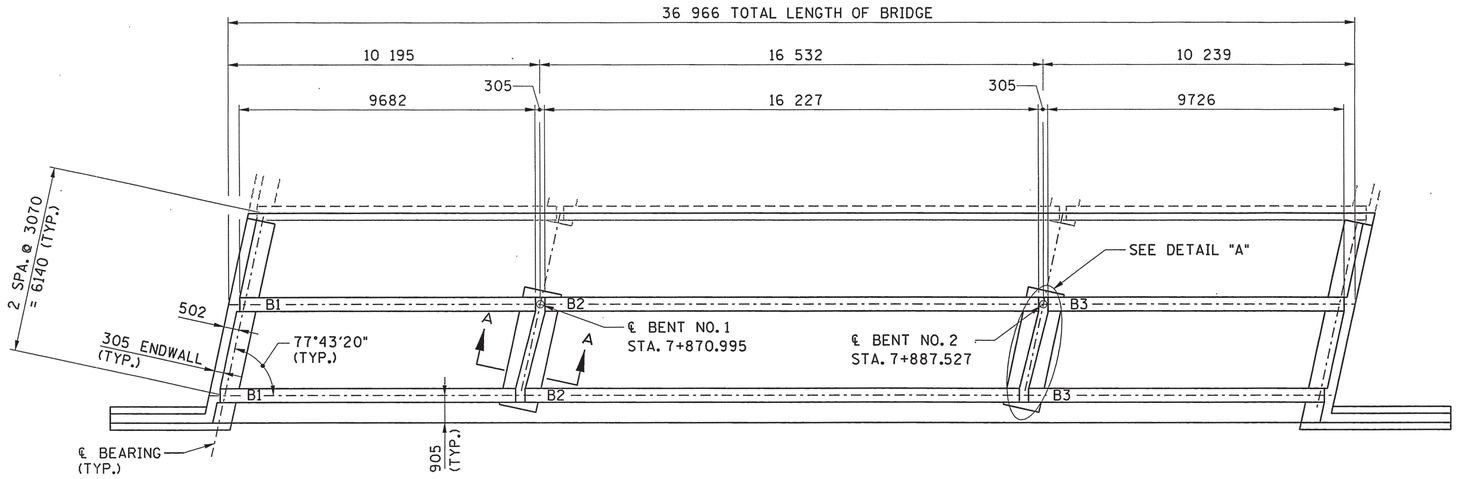


SECTION "A-A"

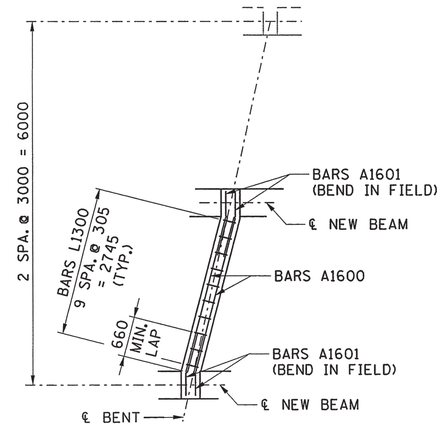
NOTE: THE SUPPORT DIAPHRAGMS AT THE BENTS SHALL BE FORMED AND THE BOTTOM 380 POURED AS SOON AS POSSIBLE AFTER THE BEAMS HAVE BEEN SET. THE REMAINDER OF THE DIAPHRAGM SHALL BE POURED CONCURRENTLY WITH THE DECK SLAB. ALL DIAPHRAGM CONCRETE SHALL BE INCLUDED IN THE QUANTITY FOR ITEM 604-03.09.



SECTION "C-C"



FRAMING PLAN



DETAIL "A"
(TYP. @ BENTS)

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

HARDIE M. BROOKS, JR. Registered Engineer 301 STATE OF TENNESSEE

Hardie M. Brooks Jr. 5/15/03

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-100

DESIGNED BY	JAF	DATE	9-02
DRAWN BY	GSeP	DATE	9-02
SUPERVISED BY	TAK / HMB	DATE	9-02
CHECKED BY	JAF	DATE	9-02

GRESHAM SMITH AND PARTNERS

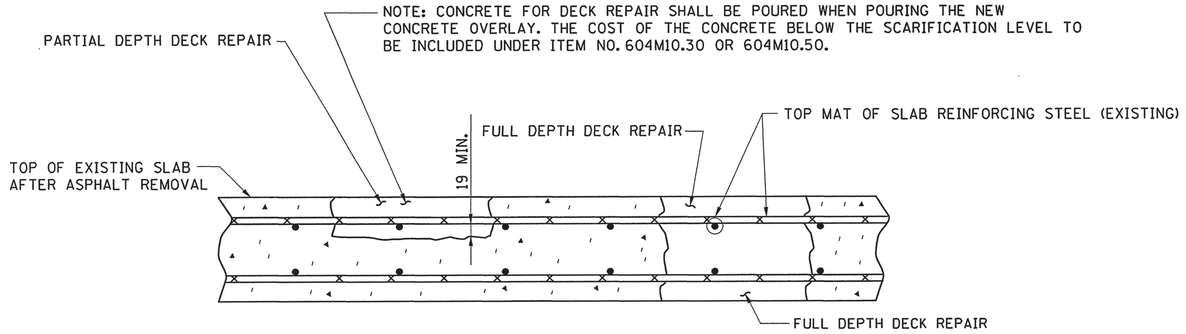
.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



DETAIL SHOWING FULL AND PARTIAL DEPTH DECK REPAIR

REMOVE CONCRETE IN ALL DELAMINATED AREAS TO A DEPTH OF 19 BELOW THE TOP BAR OF THE TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE COMPLETELY CLEANED. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE BRIDGE REPAIR OFFICE.

INSPECTIONS TO DETERMINE AREAS OF DECK REPAIR SHALL BE SCHEDULED WITH THE BRIDGE REPAIR OFFICE AT LEAST THREE (3) DAYS IN ADVANCE.

DECK REPAIR WILL BE PAID FOR UNDER ITEM NO. 604M10.50 BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), AND ITEM NO. 604M10.30 BRIDGE DECK REPAIR (FULL DEPTH OF SLAB).

DURING PARTIAL DEPTH REPAIRS, SHOULD DETERIORATED CONCRETE BE ENCOUNTERED WHICH APPEARS TO RUN FULL DEPTH IN THE SLAB, THE ENGINEER MAY DESIGNATE THESE AREAS TO BE REPAIRED UNDER ITEM NO. 604M10.30.

POWER DRIVEN HAND TOOLS USED FOR THE REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL AND FULL DEPTH REPAIRS ARE SUBJECT TO THE FOLLOWING RESTICTIONS:

1. (PARTIAL DEPTH REPAIRS) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 27kg CLASS SHALL NOT BE USED.
2. (FULL DEPTH REPAIRS) PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 41kg CLASS SHALL NOT BE USED. ALSO ALL DECK REPAIR OVER BEAMS WILL BE RESTRICTED TO 27kg PNEUMATIC HAMMERS.
3. CHIPPING HAMMERS OF THE 7kg CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.
4. TRAFFIC CONTROL SHALL BE PROVIDED FOR TRAFFIC BELOW BRIDGE DURING PARTIAL AND FULL DEPTH DECK REPAIR.

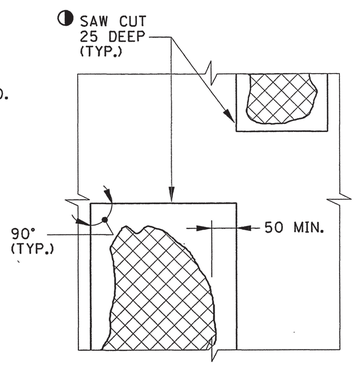
NOTE: ITEM NO. 604M10.30 AND 604M10.50 SHALL BE BID WITH THE CONTINGENCY THAT THESE ITEMS MAY BE INCREASED, DECREASED, OR ELIMINATED AS DIRECTED BY THE ENGINEER.

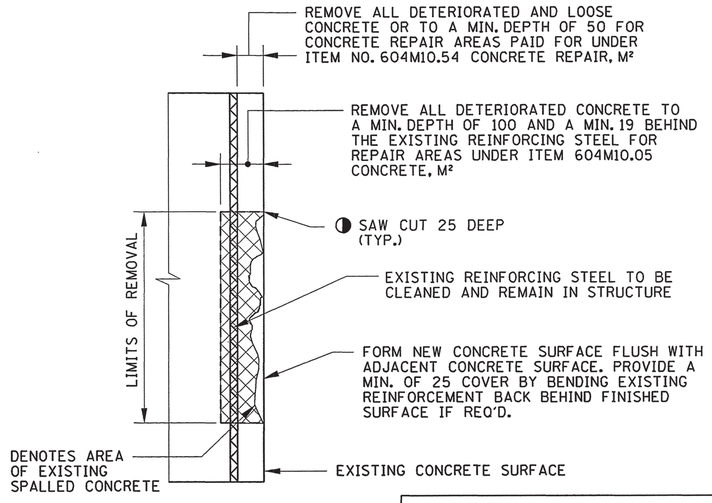
NOTE: ON PREVIOUSLY OVERLAYED STRUCTURES, THE CONTRACTOR SHALL BE ADVISED THAT HE WILL LIKELY ENCOUNTER MORE THAN TWO LAYERS OF REINFORCEMENT. COST TO COMPLETE FULL DEPTH DECK REPAIR SHALL TAKE INTO ACCOUNT THIS POSSIBLITY.

BRIDGE DECK REPAIR SCHEDULE	
ITEM NO. 604M10.50 M^2 (PARTIAL DEPTH OF SLAB)	ITEM NO. 604M10.30 M^2 (FULL DEPTH OF SLAB)
20	2

◑ SAW CUT EXISTING CONCRETE 25 DEEP SO AS TO OBTAIN A RECTANGULAR AREA, ALL EXISTING REINFORCING SHALL BE CAREFULLY PRESERVED AND BLAST CLEANED.

DENOTES: AREA OF EXISTING SPALLED CONCRETE





SPALLED CONCRETE REPAIR DETAIL

NOT TO SCALE

CONCRETE REPAIRS SCHEDULE	
LOCATION OF REPAIR	ITEM NO. 604M10.54 CONCRETE REPAIRS M^2
EBL SLAB @ ABUT. NO. 2	1.6
WBL SLAB @ ABUT. NO. 2	1.4
TOTAL	3.0

NOTES:

COST OF SAW CUTTING, EXISTING CONCRETE REMOVAL, COMPLETELY CLEANING OF EXISTING REINFORCING STEEL, CONCRETE, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN IN THESE DETAILS TO BE INCLUDED UNDER ITEM NO. 6604M10.54, CONCRETE REPAIRS, My

EXTREME CARE SHALL BE TAKEN WHEN REMOVING THE EXISTING SPALLED CONCRETE SO AS NOT TO DAMAGE THE EXISTING REINFORCING STEEL. ALL EXPOSED REINFORCING STEEL SHALL BE COMPLETELY CLEANED TO REMOVED ALL RUST. ALL EXISTING REINFORCEMENT SHALL REMAIN IN PLACE. ALL WORK MUST MEET WITH FULL APPROVAL OF THE ENGINEER.

FOR BENT CAP REPAIRS ONLY, PATCHING MATERIAL FOR ITEM NO. 604M10.54 SHALL BE A POLYMER MODIFIED CEMENTIOUS STRUCTURAL PATCHING MATERIAL. SEE QUALIFIED PRODUCTS LIST 13, SUBLIST (F).

FOR BENT COLUMN REPAIRS OUTSIDE THE LIMITS OF THE SHEAR WALL ENCASEMENT, PATCHING MATERIAL FOR ITEM NO. 604M10.54 SHALL BE A POLYMER MODIFIED CEMENTIOUS STRUCTURAL PATCHING MATERIAL. SEE QUALIFIED PRODUCTS LIST 13, SUBLIST (F). AREAS WITHIN THE SHEAR WALL WILL NOT REQUIRE THE PATCHING MATERIAL.

ALL REPAIR AREAS REQUIRING THE USE OF PATCHING MATERIALS SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF THE SHEAR WALL.

THE ENGINEER SHALL DESIGNATE ALL SPALLED AND DELAMINATED CONCRETE REPAIR AREAS IN THE FIELD. QUANTITIES GIVEN ARE APPROXIMATE. THE ENGINEER SHALL HAVE THE OPTION OF DESIGNATING A SPALL AREA TO BE REPAIRED UNDER ITEM NO. 604M03.01 (CLASS "A" CONCRETE) OR 604M10.54. (CONCRETE REPAIRS).

ITEM NOS. 604M03.01 AND 604M10.54 SHALL BE BID WITH THE CONTINGENCY THAT IT MAY BE INCREASED, DECREASED, OR ELIMINATED BY THE ENGINEER.

POWER DRIVEN HAND TOOLS USED FOR REMOVAL OF UNSOUND CONCRETE ARE SUBJECT TO THE FOLLOWING RESTRICTIONS:

1. PNEUMATIC HAMMERS HEAVIER THAN 16kg. CLASS SHALL NOT BE USED.
2. CHIPPING HAMMERS OF THE 7kg. CLASS SHALL NOT BE USED TO REMOVE CONCRETE FROM BEHIND REINFORCING STEEL

DIVISION OF METRIC ACTIVITIES

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS WIDENING OF INTERSTATE 40 (EASTBOUND LANE) OVER 40TH AVENUE BRIDGE I.D. NO. 19100400041 STATION 7+880.147 LOG MILE 13.76 DAVIDSON COUNTY 2002

HARDIE M. BROOKS, JR. — Registered Engineer — STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

DESIGNED BY JAF DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

M-435-101

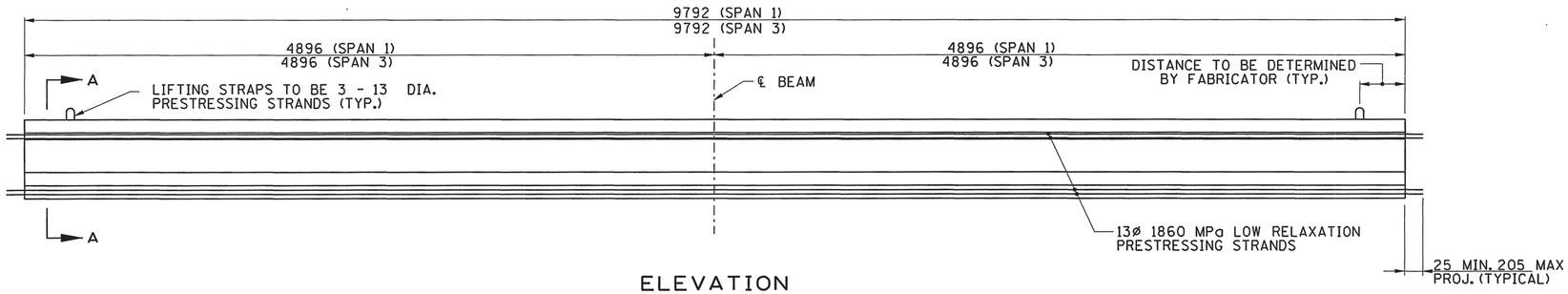
.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION

(SHOWING PRESTRESSING STRANDS)

NOTES:

NOTE: SEE STDM-14-2 FOR I-BEAM STANDARD DETAILS, NOTES, AND REINFORCING.

ALL BEAMS ARE AASHTO - PCI STANDARD TYPE IIM.

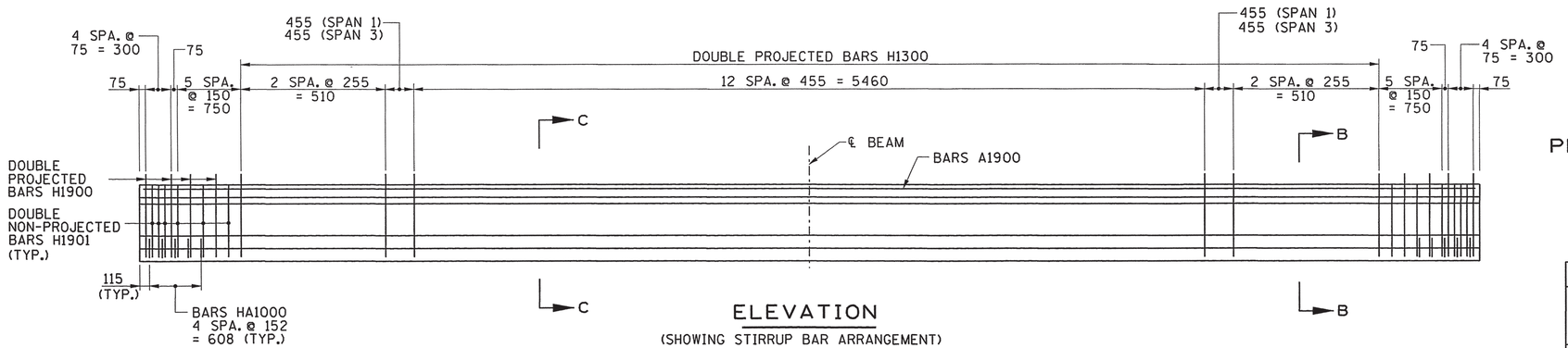
THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 42 MPa AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 35 MPa. SEE GENERAL NOTES FOR CONCRETE FINISHING NOTE.

BILL OF STEEL PER - BEAM
SPAN NO. 1

BAR	SIZE	NO. REQ'D	LENGTH
A1900	19	2	9580
A1600	16	6	1675
H1300	13	50	1320
H1900	19	16	1320
H1901	19	24	1115
HA1000	10	10	1045

BILL OF STEEL PER - BEAM
SPAN NO. 3

BAR	SIZE	NO. REQ'D	LENGTH
A1900	19	2	9625
A1600	16	6	1675
H1300	13	50	1320
H1900	19	16	1320
H1901	19	24	1115
HA1000	10	10	1045



ELEVATION

(SHOWING STIRRUP BAR ARRANGEMENT)

PRESTRESSED BEAM DESIGN DATA - PER BEAM

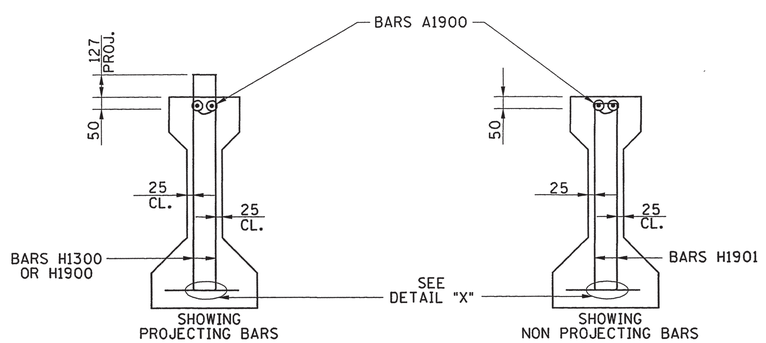
LIVE LOAD DISTRIBUTION FACTOR: 1.417
COMPOSITE DEAD LOAD: 586 kg/m
COMPOSITE SLAB DESIGN STRENGTH f'c = 21 MPa
NOTE: DOWNWARD DEFLECTION UNDER TOTAL DL IS NOT ALLOWED.

ESTIMATED QUANTITIES - PER BEAM

SPAN	NO. BEAMS REQ.	PRESTRESSING STRANDS (LOW RELAXATION) KG	CLASS "A" CONCRETE M3	REINFORCING STEEL KG
1	2	157	3	237
3	2	158	3	237

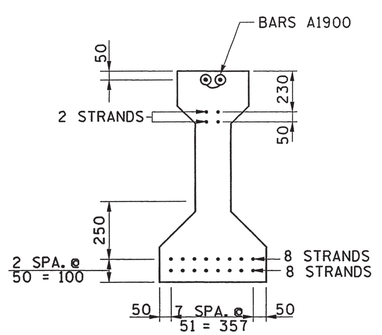


DETAIL "X"



SECTION "C"-"C"

SECTION "B"-"B"



SECTION "A"-"A"

(SHOWING PRESTRESSING STRANDS)
(20 STRANDS)

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESTRESSED I-BEAM DETAILS SPANS 1 & 3 WIDENING OF INTERSTATE 40 (EASTBOUND LANE) OVER 40TH AVENUE BRIDGE I.D. NO. 19100400041 STATION 7+880.147 LOG MILE 13.76 DAVIDSON COUNTY 2002

HARDIE M. BROOKS, JR. REGISTERED ENGINEER 57153 STATE OF TENNESSEE

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-102

DESIGNED BY JAF DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

dgnspec
07/08/2002 07:55:06

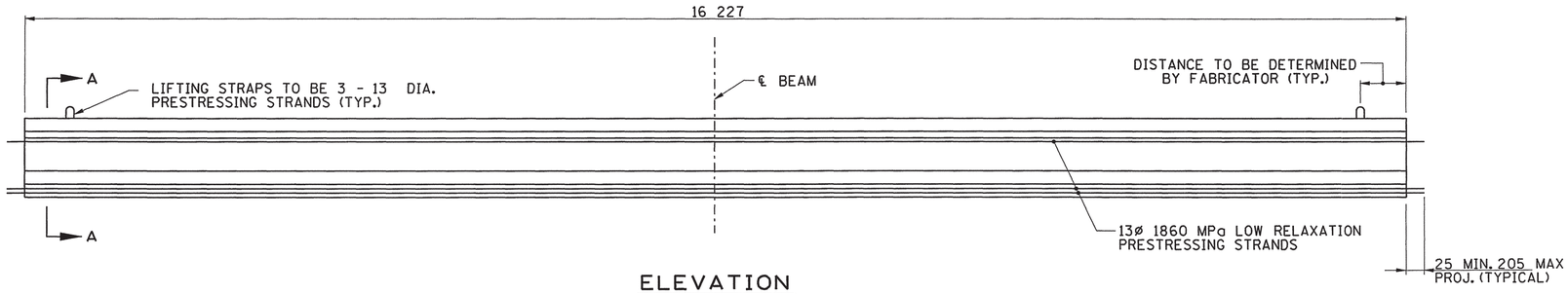
.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION

(SHOWING PRESTRESSING STRANDS)

NOTES:

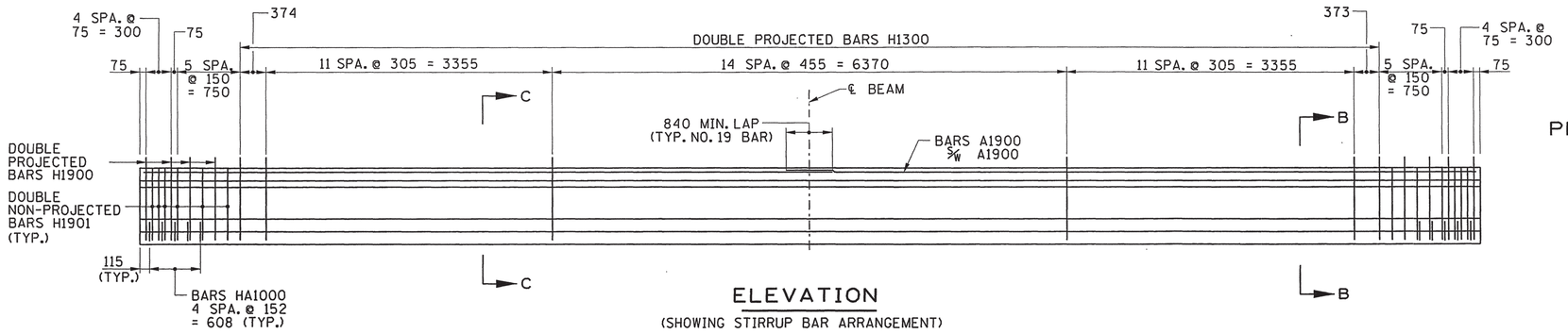
NOTE: SEE STDM-14-2 FOR I-BEAM STANDARD DETAILS, NOTES, AND REINFORCING.

ALL BEAMS ARE AASHTO - PCI STANDARD TYPE IIM.

THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 42 MPa AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 35 MPa. SEE GENERAL NOTES FOR CONCRETE FINISHING NOTE.

BILL OF STEEL PER - BEAM

BAR	SIZE	NO. REQ'D	LENGTH
A1900	19	4	8485
A1600	16	6	1675
H1300	13	64	1320
H1900	19	16	1320
H1901	19	24	1115
HA1000	10	10	1045



ELEVATION

(SHOWING STIRRUP BAR ARRANGEMENT)

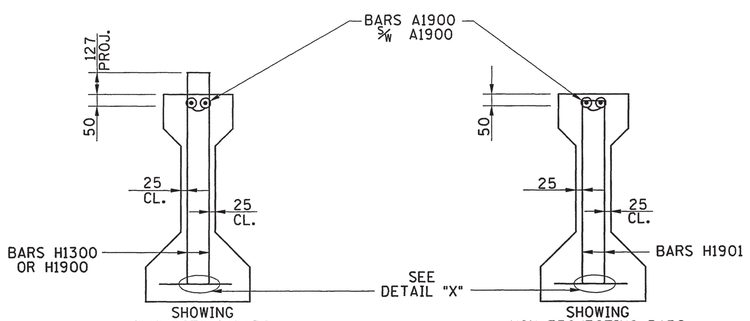
PRESTRESSED BEAM DESIGN DATA - PER BEAM

LIVE LOAD DISTRIBUTION FACTOR: 1.417
COMPOSITE DEAD LOAD: 586 kg/m
COMPOSITE SLAB DESIGN STRENGTH f'c = 21 MPa
NOTE: DOWNWARD DEFLECTION UNDER TOTAL DL IS NOT ALLOWED.

ESTIMATED QUANTITIES - PER BEAM

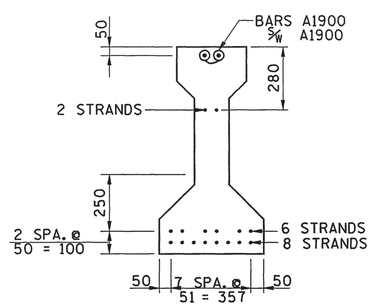
NO. BEAMS REQ.	PRESTRESSING STRANDS (LOW RELAXATION) KG	CLASS "A" CONCRETE M3	REINFORCING STEEL KG
2	207	4	289

DETAIL "X"



SECTION "C"-"C"

SECTION "B"-"B"



SECTION "A"-"A"

(SHOWING PRESTRESSING STRANDS)
(16 STRANDS)

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PRESTRESSED I-BEAM DETAILS SPAN 2 WIDENING OF INTERSTATE 40 (EASTBOUND LANE) OVER 40TH AVENUE

BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

HAROLD A. BROOKS 4 STATE OF TENNESSEE 5/15/03

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

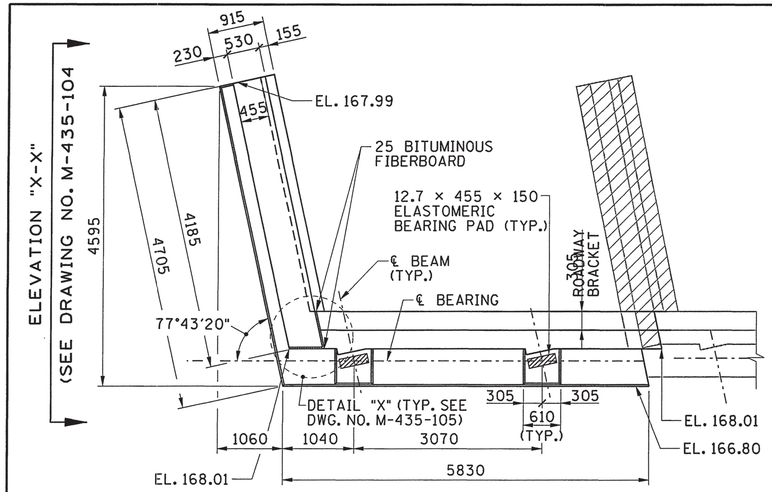
M-435-103

DESIGNED BY JAF DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

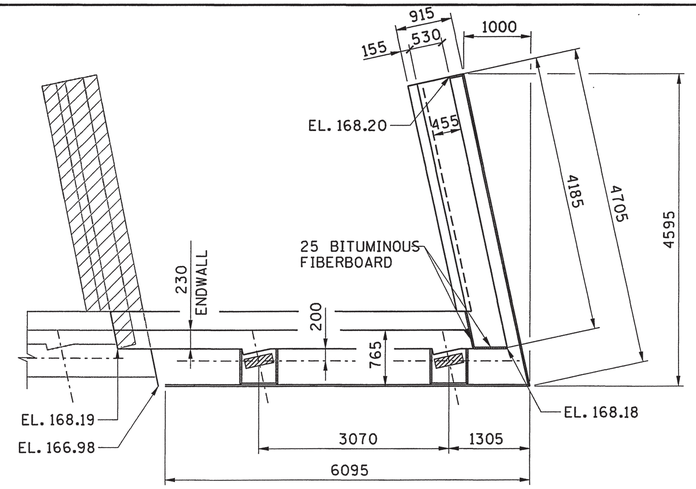
GRESHAM SMITH AND PARTNERS

dgnsps
dgnsps
dgnsps

.DGN



ABUTMENT NO. 1 PLAN VIEW



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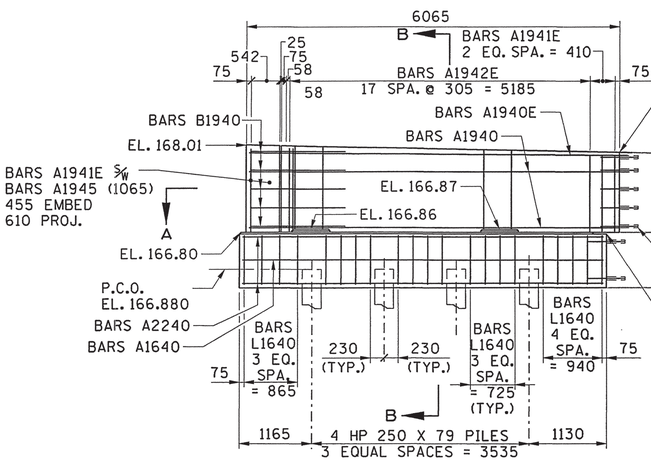
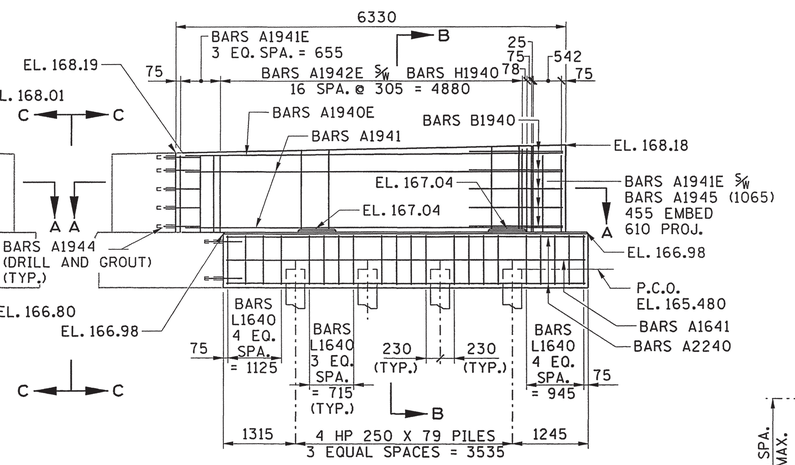


ABUTMENT NO. 1 ELEVATION VIEW



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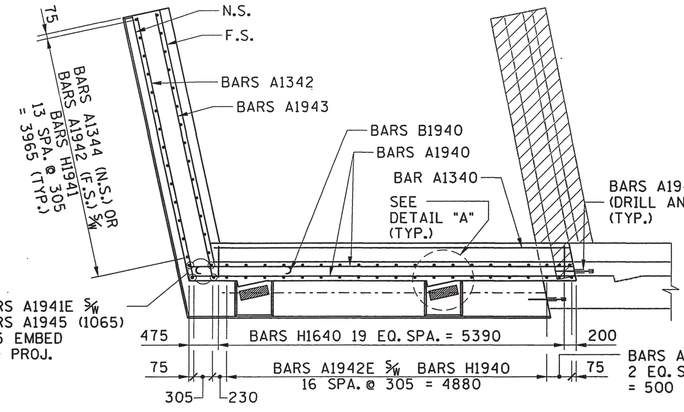
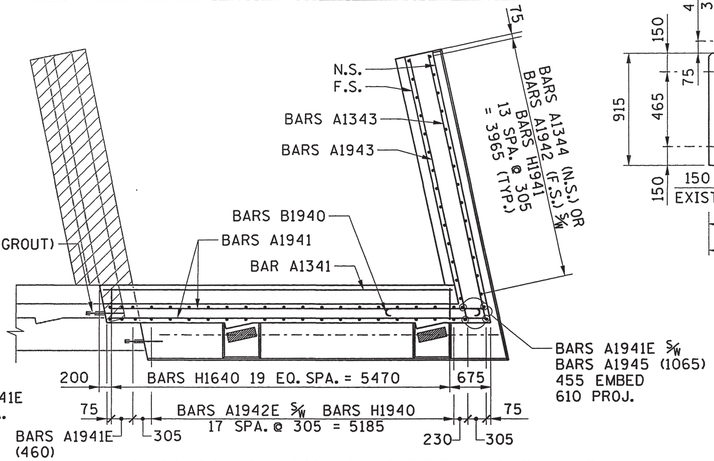


ABUTMENT NO. 1 SECTION "A-A"



ABUTMENT NO. 2 SECTION "A-A"

DESIGNED BY JAF DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

F.S. DENOTES: FAR SIDE
N.S. DENOTES: NEAR SIDE

DENOTES: PORTION TO BE REMOVED

NOTES:

RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOST AND PARAPETS. FOR DETAILS OF WINGPOSTS AND PARAPET, SEE STD. DWG. NO. STDM-1-1.

NOT LESS THAN HALF OF THE SLAB IN THE END SPAN SHALL BE POURED PRIOR TO, OR CONCURRENTLY WITH, PLACEMENT OF ANY PART OF THE ABUTMENT BACKWALL. AT LEAST THE TOP 305 OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.

COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE BRIDGE RAIL SYSTEM.

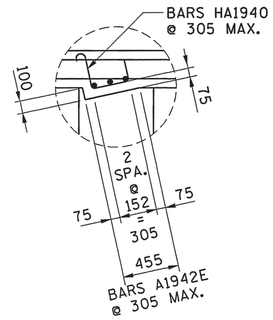
ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

CONST. NO. 19003-3187-44

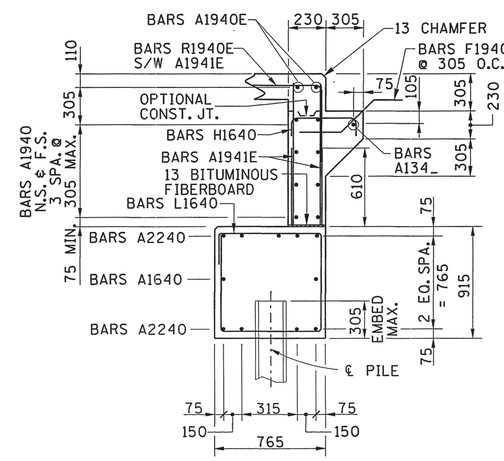
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	05/14/03	JF	GENERAL



DETAIL "A"



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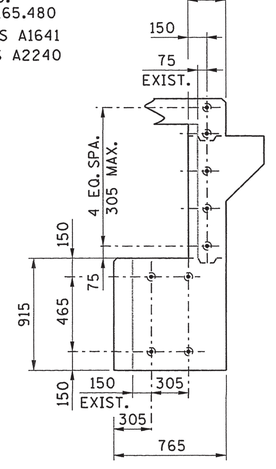
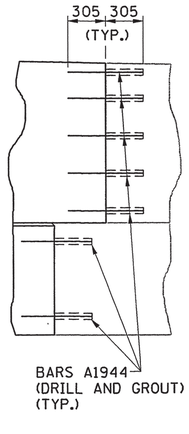


SECTION "C-C"



ESTIMATED QUANTITIES

LOCATION	CLASS "A" CONCRETE (BRIDGES) M³	STEEL BAR REINFORCEMENT (BRIDGES) KG	EPOXY COATED REINFORCING STEEL (BRIDGES) KG
ABUT. NO. 1	13	982	305
ABUT. NO. 2	13	1135	307

DIVISION OF METRIC ENGINEERING

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

1

ABUTMENT NO. 1 & 2
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

HARDIE M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE 5/14/03

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-104

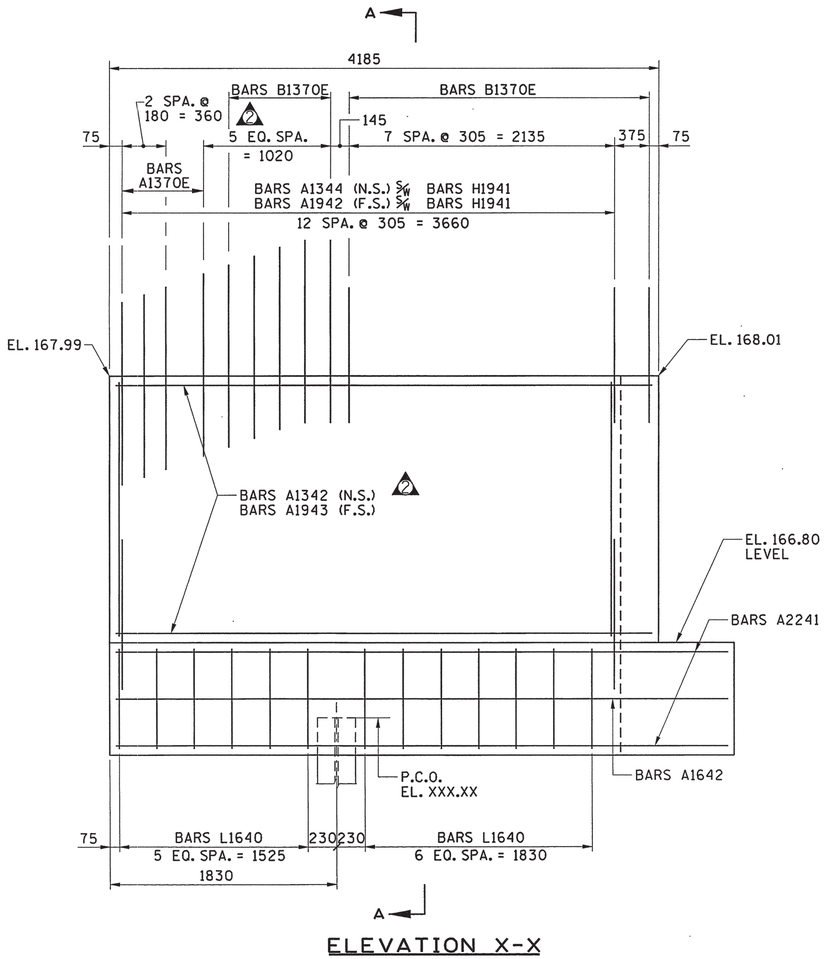
.DGN

CONST. NO. 19003-3187-44

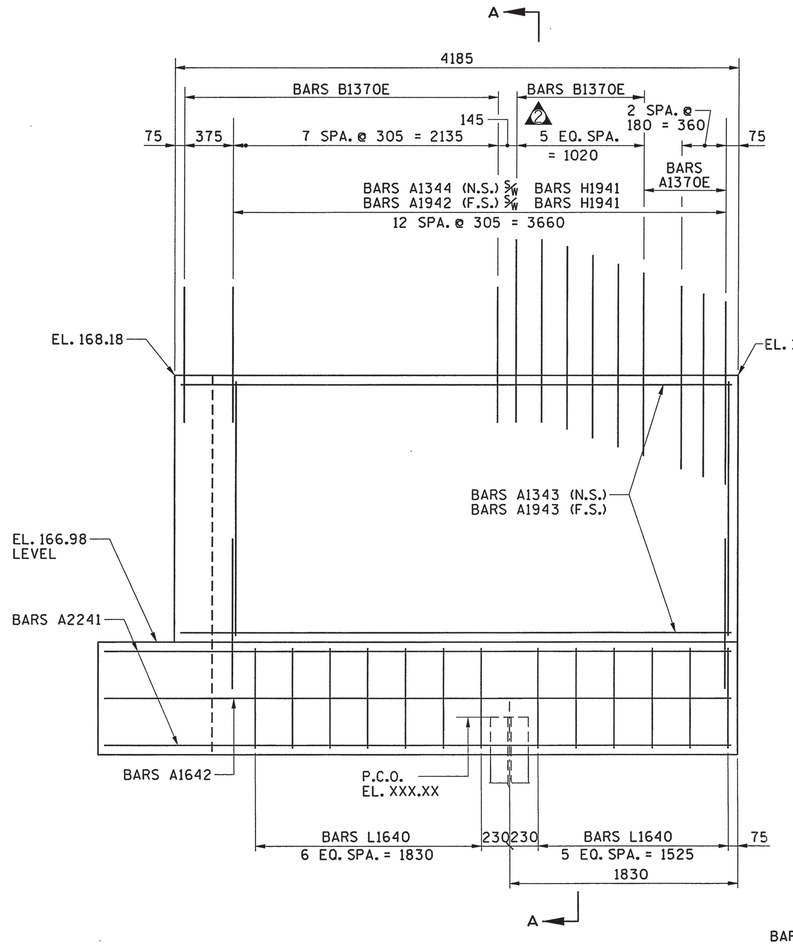
PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

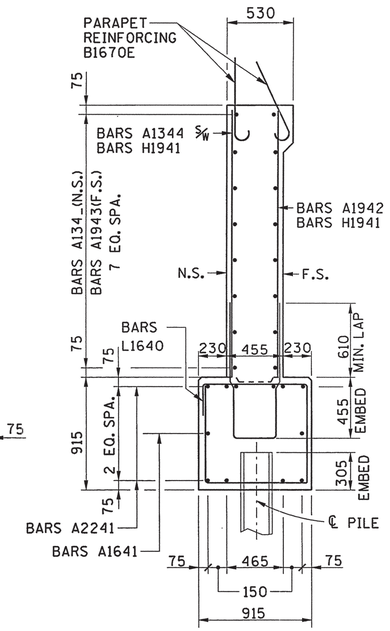
NO.	DATE	BY	BRIEF DESCRIPTION
1	04/18/03	JF	GENERAL
2	05/14/03	JF	GENERAL



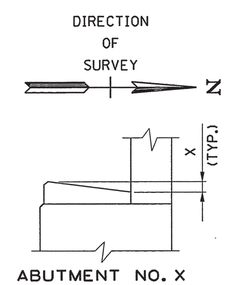
ELEVATION X-X



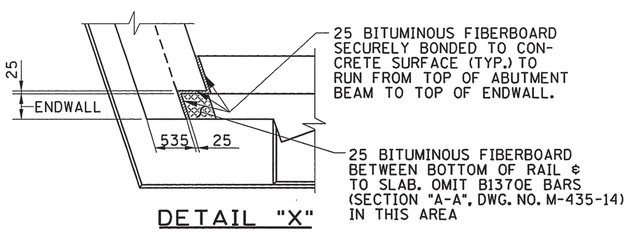
ELEVATION Y-Y



SECTION "D-D"



RISER BLOCK SLOPE DETAILS



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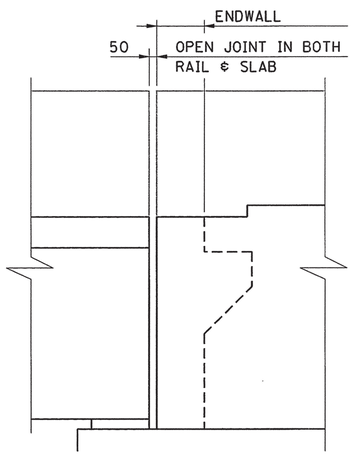


ELEVATION OF PARAPET AND WING W/ESPANSION JOINT

DESIGNED BY JAF DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

DIVISION OF STRUCTURES METRIC

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6

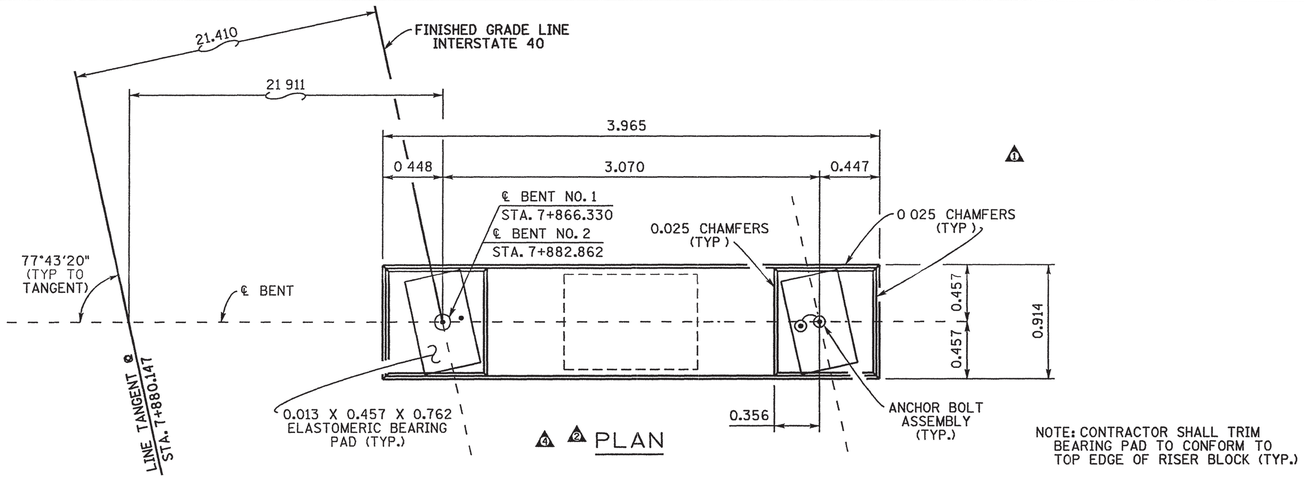
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

ABUTMENT NO. 1 ℄ 2 DETAILS
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

HARDIE M. BROOKS JR. REGISTERED ENGINEER STATE OF TENNESSEE 5-14-03

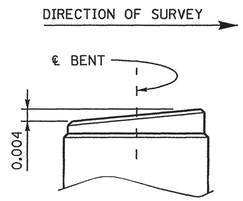
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-105



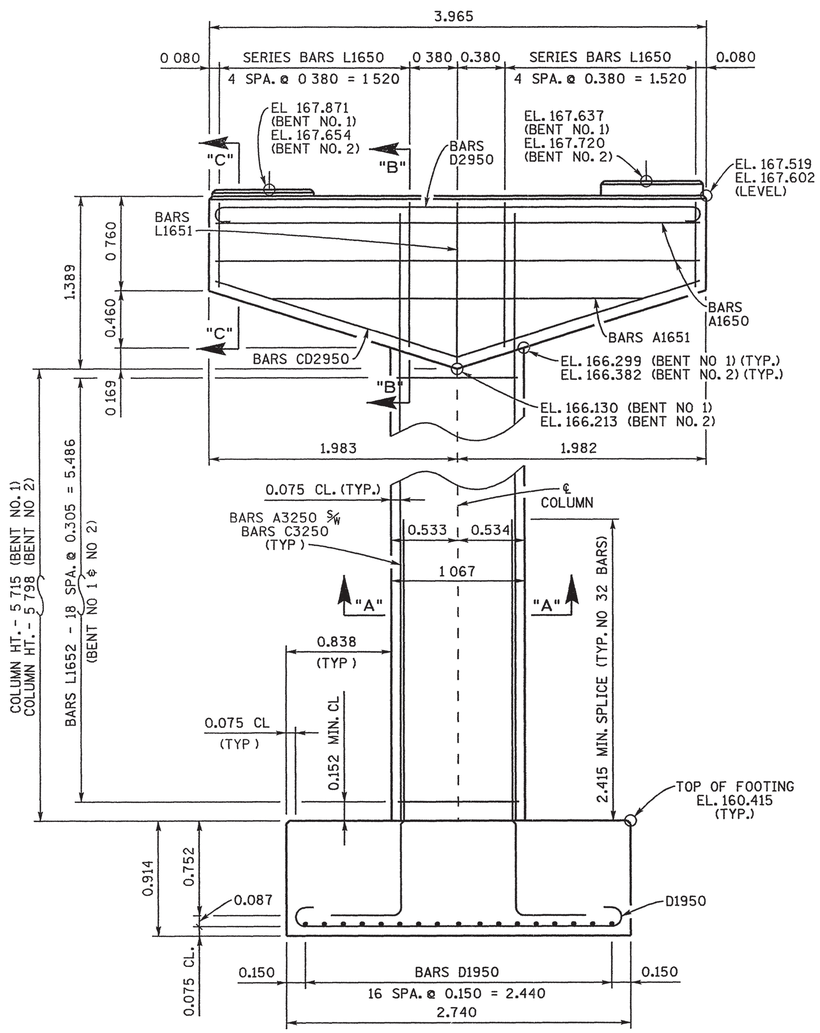
1 2 PLAN

NOTE: CONTRACTOR SHALL TRIM BEARING PAD TO CONFORM TO TOP EDGE OF RISER BLOCK (TYP.)



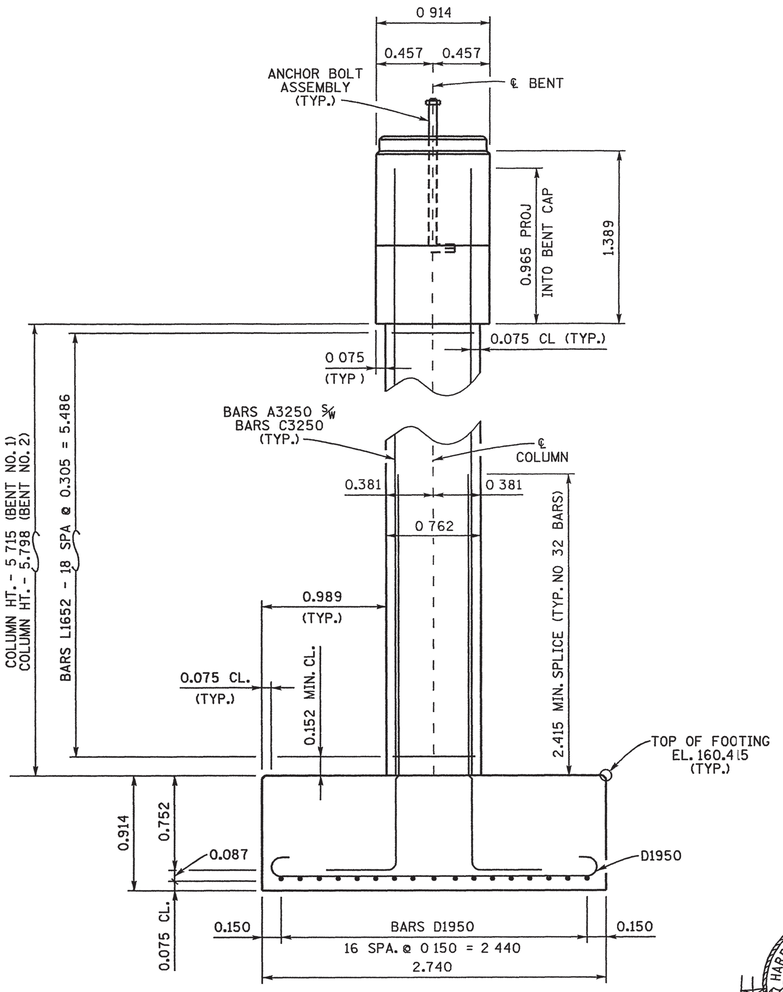
2 RISER BLOCK SLOPE DETAILS

(TYP. ℄ EACH BENT)



2 ELEVATION

(LOOKING FORWARD ON SURVEY)



2 END ELEVATION

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	05/14/03	JF	GENERAL
2	02/20/04	JF	BENT CHANGED
3	4/28/04	JF	STEEL QUANTITIES
4	6/1/04	JF	DIMENSIONS

NOTE: WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STANDARD DRAWING STDM-6-1. BOLT PROJECTION 279.

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

NOTE: ELASTOMERIC PADS SHALL BE IN PLACE A MINIMUM OF ONE DAY BEFORE BEING DISTURBED BY SETTING BEAMS ON CONCRETE. PLACE RUBBER BONDING CEMENT IN SUCH A WAY THAT VISIBLE CONCRETE SURFACES WILL NOT BE STAINED.

NOTE: RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE

NOTE: COLUMN STEEL TO EXTEND 0 965m INTO CAP BEAM.

ESTIMATED QUANTITIES 1 2 3

	CLASS 'A' CONCRETE (BRIDGES) M^3	STEEL BAR REINFORCEMENT (BRIDGES) Kg
BENT NO 1	14	2262
BENT NO. 2	14	2274

DIVISION OF METRIC STRUCTURES

NOTE ALL DIMENSIONS SHOWN IN METERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT NO. 1 & NO. 2
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDISON COUNTY
2002

HAROLD M. BROOKS, JR. REGISTERED ENGINEER STATE OF TENNESSEE 6/1/04

CORRECT Edward P Wasserman
ENGINEER OF STRUCTURES

M-435-106

DESIGNED BY	J FALCE	DATE 09-02
DRAWN BY	T.WISEMAN	DATE 02-04
SUPERVISED BY	RLH/HMB	DATE 09-02
CHECKED BY	J. FALCE	DATE 03-04

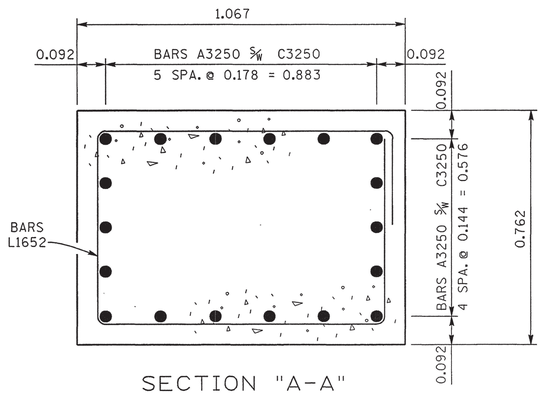
s:\dgn\Bnt\bnt299mr4.dgn
26-MAY-2004
10 01

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2000	

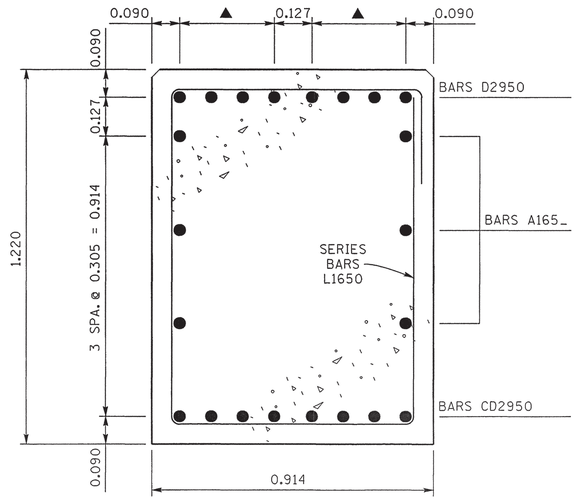
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	02/20/04	JF	ADDED SHEET TO PLANS.



SECTION "A-A"

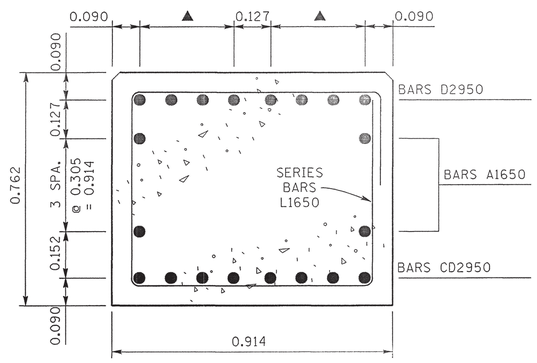
(TYP. @ COLUMN)



▲ DENOTES 3 SPA. @ 0.102 = 0.305

SECTION "B-B"

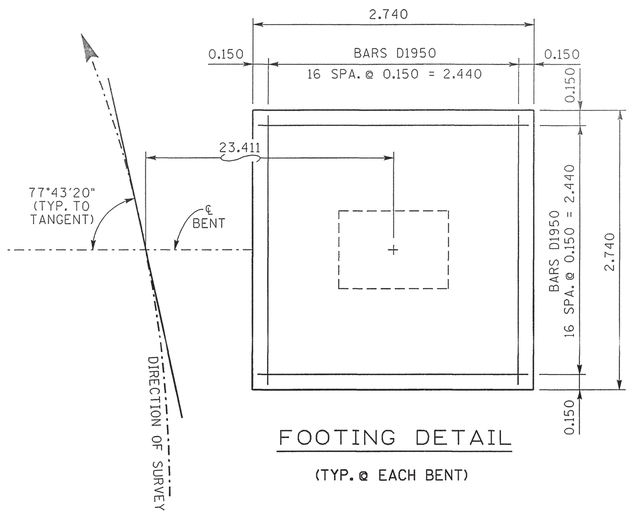
(TYP @ ℄ COLUMN)



▲ DENOTES 3 SPA. @ 0.102 = 0.305

SECTION "C-C"

(TYP. @ ENDS)



FOOTING DETAIL

(TYP. @ EACH BENT)

NOTE: ALL DIMENSIONS SHOWN IN METERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS, UNLESS OTHERWISE NOTED.

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BENT NO. 1 & NO. 2 DETAILS
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDISON COUNTY
2002

HARDIE M. BROOKS, JR. STATE OF TENNESSEE

Hardie M. Brooks Jr.
2/23/04

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-106A

DESIGNED BY	J. FALCE	DATE	09-02
DRAWN BY	T.WISEMAN	DATE	02-04
SUPERVISED BY	RLH/HMB	DATE	09-02
CHECKED BY	J. FALCE	DATE	03-04

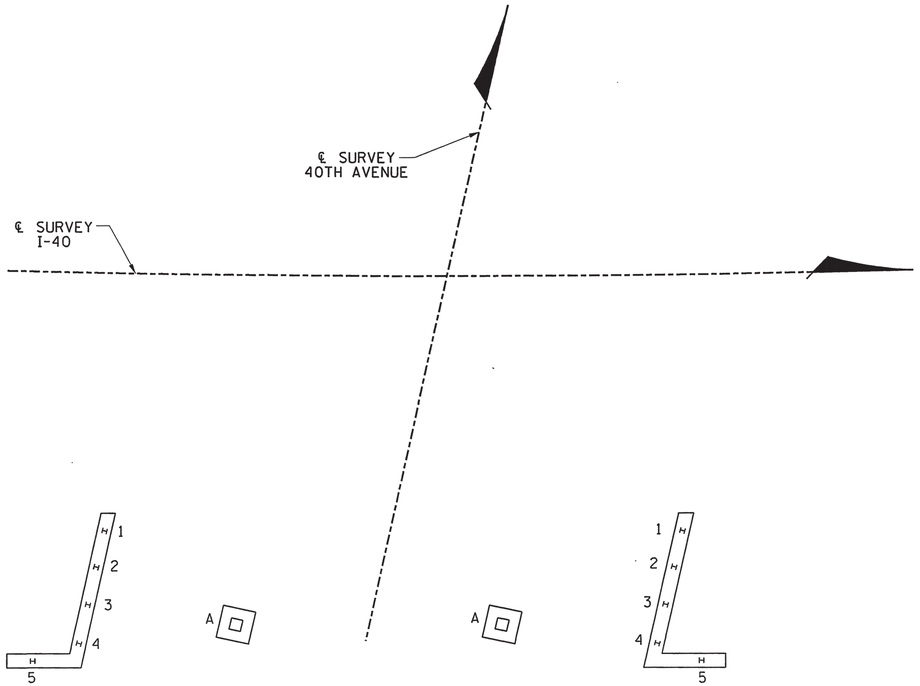
.DGN

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



ABUTMENT NO. 1 (RIGHT) | BENT NO. 1 (RIGHT) | BENT NO. 2 (RIGHT) | ABUTMENT NO. 2 (RIGHT)

FOUNDATION PLAN

(SHOWING FOOTING & PILE LOCATION)
(LOOKING FORWARD ON SURVEY)

TABLE OF PILE DATA

		1	2	3	4	5
ABUTMENT NO. 1	PILE CUT-OFF ELEVATION					
	PILE TIP ELEVATION					
	IN PLACE PILE LENGTH					
ABUTMENT NO. 2	PILE CUT-OFF ELEVATION					
	PILE TIP ELEVATION					
	IN PLACE PILE LENGTH					

TABLE OF FOOTING DATA

	BENT NO. 1	BENT NO. 2
	A	B
TOP OF FOOTING ELEVATION		
BOTTOM OF FOOTING ELEVATION		

NOTE:
TO CONTRACTOR AND CONSTRUCTION OFFICE:
THE BLANKS ON THIS SHEET ARE TO BE FILLED IN BY THE CONSTRUCTION OFFICE AND/OR FIELD ENGINEER GIVING AS-BUILT CONDITIONS. AFTER COMPLETION IT IS TO BE SENT TO THE DIVISION OF STRUCTURES TO BECOME PART OF FINAL BRIDGE DOCUMENTS.

NOTE: ALL DIMENSIONS SHOWN IN MILLIMETERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED

BRIDGE NO. 6
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FINAL FOUNDATION DATA
WIDENING OF INTERSTATE 40
(EASTBOUND LANE)
OVER 40TH AVENUE
BRIDGE I.D. NO. 19100400041
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

DESIGNED BY JAF DATE 9-02
DRAWN BY GSeP DATE 9-02
SUPERVISED BY TAK / HMB DATE 9-02
CHECKED BY JAF DATE 9-02

GRESHAM SMITH AND PARTNERS

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-435-107

CONST. NO. 19003-3187-44

PROJECT NO.	YEAR	SHEET NO.
HPP/IM-40-3(121)204	2002	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	05/14/03	JF	GENERAL
2	05/14/03	JF	GENERAL
3	02/20/04	JF	GENERAL
4	04/28/04	JF	BENT REINFORCING BARS

BILL OF STEEL

SUPERSTRUCTURE (EPOXY)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1600E	SLAB	16	112					9144
A1601E	SLAB	16	28					3555
A1602E	SLAB	16	478					7153
A1603E	SLAB	16	50					18288
A1604E	SLAB	16	25					1880
A1605E	SLAB	16	48					9525
B1371E	RAIL	13	244					815

SUPERSTRUCTURE (REGULAR)

A1600	DIAPHRAGM	16	16					3050
A1601	DIAPHRAGM	16	32					1777
L1300	DIAPHRAGM	13	40	205	305	925		2565
LS1300	DIAPHRAGM	13	12	152	152			915

ABUTMENT NO. 1 (EPOXY)

A1370E	WING	13	8	815				1015
A1940E	ENDWALL	19	2					5965
A1941E	ENDWALL	19	7					1130
A1942E	ENDWALL	19	52					1065
B1370E	WING	13	16	815				1065
F1940E	RDWY. BRKT.	19	20	305	860	305		1470
R1940E	SLAB	19	7	760	610			1370

ABUTMENT NO. 1 (REGULAR)

A1340	RDWY. BRKT.	13	1					5285
A1342	WING	13	8					4085
A1344	WING	13	13					1175
A1640	ABUT. BEAM	16	2					5760
A1642	WING	16	2					4605
A1940	ENDWALL	19	10					5965
A1942	WING	19	13					4085

ABUTMENT NO. 1 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1943	WING	19	8					4200
A1944	ABUT. BEAM	19	9					610
A1945	ENDWALL	19	4					1065
A2240	ABUT. BEAM	22	9					5760
A2241	WING	22	9					4606
B1940	ENDWALL	19	5					1525
H1640	RDWY. BRKT.	16	20	415	130			695
H1941	WING	19	15	915	355			2185
HA1940	FILLET	19	6	305	505	405		1218
L1640	ABUT. BEAM	16	34	615	305	618		2765

ABUTMENT NO. 2 (EPOXY)

A1370E	WING	13	8	815				6230
A1940E	ENDWALL	19	2					6180
A1941E	ENDWALL	19	8					1180
A1942E	ENDWALL	19	52					1065
B1370E	WING	13	17	815				1065
F1940E	RDWY. BRKT.	19	20	305	860	305		1470
R1940E	SLAB	19	8	760	610			1370

ABUTMENT NO. 2 (REGULAR)

A1341	RDWY. BRKT.	13	1					5370
A1343	WING	13	8					4085
A1344	WING	13	13					1175
A1641	ABUT. BEAM	16	2					5995
A1642	WING	16	2					4605

ABUTMENT NO. 2 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A1941	ENDWALL	19	10					6230
A1942	WING	19	13					4085
A1943	WING	19	8					4200
A1944	ABUT. BEAM	19	9					610
A1945	ENDWALL	19	4					1065
A2240	ABUT. BEAM	22	9					5995
A2241	WING	22	9					4605
B1940	ENDWALL	19	5					1525
H1640	RDWY. BRKT.	16	20	415	130			695
H1941	WING	19	15	915	355			2185
HA1940	FILLET	19	6	305	505	405		1220
L1640	ABUT. BEAM	16	35	615	305	765		3365

BENT NO. 1 (REGULAR) 3 4

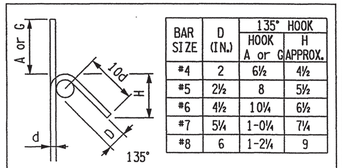
A1650	CAP	16	4					3860
A1651	CAP	16	2					3100
A3250	COLUMN	32	22					6680
C3250	FOOTING	32	22	3280				3840
CD2950	CAP	29	8	1985	1985	1930		3970
D1950	FOOTING	19	34	2640				3040
D2950	CAP	29	8	3860				4610
SERIES L1650	CAP	16	2	780	305	VAR. FROM 625 TO 1080 IN INC. OF 115 (5 BARS)		18075

BENT NO. 1 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
L1651	CAP	16	1	780	305	1225		4375
L1652	COLUMN	16	19	967	305	662		3563

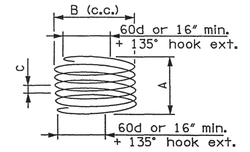
BENT NO. 2 (REGULAR) 3 4

A1650	CAP	16	4					3860
A1651	CAP	16	2					3100
A3250	COLUMN	32	22					6763
C3250	FOOTING	32	22	3280				3840
CD2950	CAP	29	8	1985	1985	1930		3970
D1950	FOOTING	19	34	2640				3040
D2950	CAP	29	8	3860				4610
SERIES L1650	CAP	16	2	780	305	VAR. FROM 625 TO 1080 IN INC. OF 115 (5 BARS)		18075
L1651	CAP	16	1	780	305	1255		4375
L1652	COLUMN	16	19	967	305	662		3563

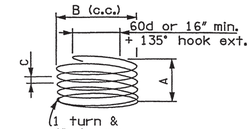


BAR SIZE	D (IN.)	135° HOOK HOOK A or C	135° HOOK H APPROX.
#4	2	6½	4½
#5	2½	8	5½
#6	4½	10¼	6½
#7	5¼	1'-0¾	7¼
#8	6	1'-2¼	9

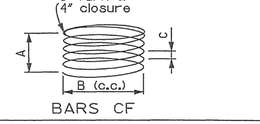
135° SEISMIC STIRRUP TIE HOOK DIMENSIONS (ALL GRADES)



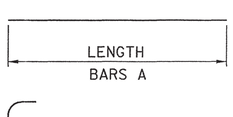
BARS M



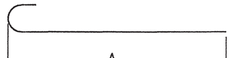
BARS TB



BARS CF



BARS A



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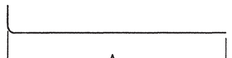

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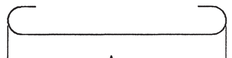

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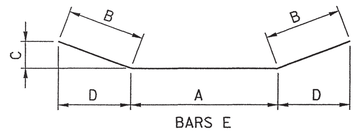

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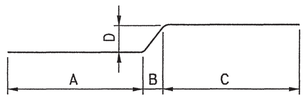

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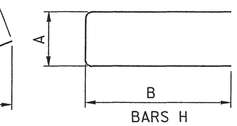
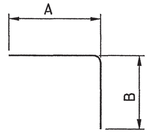
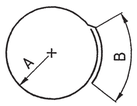


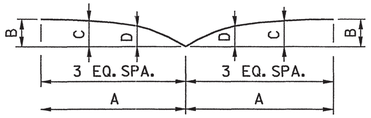
BARS H



BARS R



BARS T



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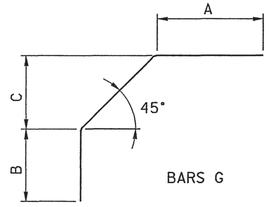

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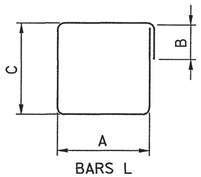
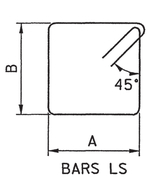


BARS L



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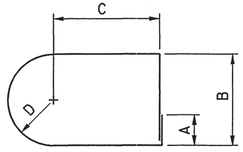
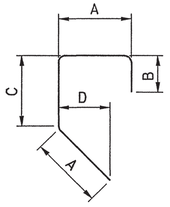
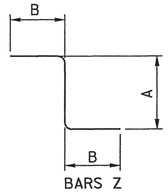


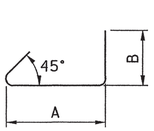
BARS X



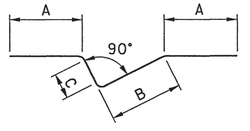
BARS J



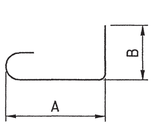
BARS Z



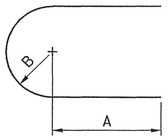
BARS YB



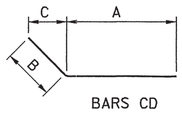
BARS JX



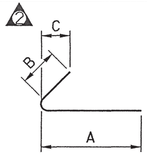
BARS YA



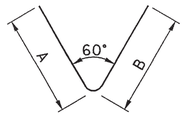
BARS XA



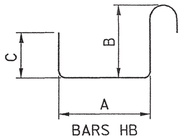
BARS CD



BARS CB



BARS VA



BARS HB

REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

NOTE: Dimensions shown on this sheet are outside to outside of bar. Standard C.R.S.I. Hook Details shall apply, except as noted.

NOTE: The suffix E for bars so marked denotes epoxy coated reinforcement.

NOTE: ALL TOTAL BAR LENGTHS SHOWN IN METERS. BENDING DIMENSIONS SHOWN IN METERS UNLESS OTHERWISE NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

BILL OF STEEL
WIDENING OF INTERSTATE 40
(EASTBOUND LANE
OVER 40TH AVENUE
STATION 7+880.147
LOG MILE 13.76
DAVIDSON COUNTY
2002

M-435-108

DESIGNED BY J. FALCE DATE 9/02
DRAWN BY M.CHILDRESS DATE 9/02
SUPERVISED BY RLH / HMB / TAK DATE 9/02
CHECKED BY J. FALCE DATE 9/02

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

\\J10019083wf013\13shared\Structdrop\Drop\Bridge 6 - Robertson Road Project\bos299m.dgn
29-APR-2004
11:00